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ON VULCANITE DENTURES.*

By J. AUSTIN BIGGS.

MR. CHAIRMAN AND GENTLEMEN,—The subject of my paper is one which I have no doubt will have occasioned no little surprise—in that I should venture to speak on Vulcanite Dentures before such an influential Society, many of whose members have been engaged daily, more or less, in the construction of Artificial Dentures in Vulcanite since the introduction of that material.

Now, if I had to speak to men of half-enlightened minds, semi-ignorant of the subject spoken of, it might be easy to delude or be deluded. I might be met with carping criticism and my motive be misconstrued, and I might otherwise be uncharitably dealt with—for in no case will these be charitable; it is there where “a little knowledge is a dangerous thing,” for, knowing little, they will be satisfied they know all.

But, gentlemen, the cultured mind is ever charitable, and although the subject on which I speak is familiar to you all, this gives me confidence, feeling satisfied that while addressing you I shall have your indulgence, if my shortcomings should necessitate it. I am well aware, however, that he who leaves the beaten track must be prepared to meet with obstacles. Nor would I venture to speak on such a subject before you but for the assurance that comes from success. I shall court your criticism in a fair field, and desire no favour. Somewhere about twenty-six years ago rubber was introduced into this country by Mr. Putman, of America, for the manu-

* Read before the Odonto-Chirurgical Society on December 8th, 1881.

facture of Artificial Dentures. Great efforts have been made since then to improve the machinery requisite for its manipulation—I mean the Vulcanisers, Flasks, Clamps, &c.—the principal object in view being the shortening of the time required for the vulcanisation of the caoutchouc, the utility of which I very much doubt, for, as commonly treated, I have little hesitation in saying that, under higher temperature and diminished time in vulcanising, the vulcanite suffers in elasticity, density, and durability; but I digress. Much as has been done in the way of improving machinery, comparatively little has been done in improving the original method recommended for the modelling up of cases, flasking, packing, &c. It must be admitted that a few gentlemen have given considerable attention to the flasking, packing, and so on, as shown by the introduction of the three and four part flasks to facilitate the packing of the rubber into the mould; and also Dr. Dewar's ingenious little apparatus for the same purpose. Yet while we admire the ingenuity of these devices can we deny that they are now obsolete?

Still, Dr. Dewar's apparatus was by no means impracticable, though having the disadvantage of limiting to the use of but one rubber in each piece, and being far too weakly constructed. Since the introduction of celluloid, we have an apparatus very much similar in intention—namely, to inject the softened material into the flask without opening to wash, &c. Probably the result would be similar, but instead of a plaster mould being used, one of block tin or type metal is substituted, and is not crushed by the force required, as plaster would be, and hence the case retains in a much greater degree its form and fit.

Some twelve years ago my attention was awakened to the fact that plaster of Paris was only reliable under certain conditions as a model. It is essential that it be fresh and crisp, that no foreign material, such as salt, alum, borax, or even hot water, be mixed with it to produce hardness, as the hardness so acquired is very deceptive, being enduring only till introduced into the vulcaniser. Now plaster, which deteriorates to any great extent vastly impairs the fit of the case, because in cooling vulcanite has almost as great a ten-

dency to contract as it has to expand under heat. How often is a model which has lain on the bench for days, ultimately taken and set in a flask and vulcanised upon? Now in no case does plaster make a thorough union with the surface of plaster already set, but the older the set piece the more imperfect will be the union. Therefore it is desirable that in flasking a case (especially where there are teeth upon the model, aggravated by being undercut, or standing at various angles) that the mould consists of but one piece, or is made in as few divisions or mixtures as possible.

In all cases where a model is cut and trimmed up to sit in a flask around which plaster is poured, there is great danger of the model yielding when pressure is applied, and this yielding is all the more deceptive because of its slight character. The union between a model and the plaster embedding it in the flask is as imperfect as the union of rubber where it has been repaired—the union is close, but still imperfect. This is illustrated daily in all Dental laboratories. After vulcanising, who has not seen the model remain apparently intact, and the surrounding plaster fall away? If, then, we consider the thinness and the material of which many of the flasks in use are composed, I think it only matter of surprise how cases made under these difficulties fit at all. In my opinion, cast metal and gun metal are useless materials to make flasks of. The one is liable to fracture, and the other to twist out of shape. Besides all this, flasks are made with a lid, the use of which I have never been able to comprehend. I here show a flask of my own design. This flask has been in use for some years and is little the worse. As you see, it is made in two pieces; is thick and strong, being made of malleable cast iron. Having a reliable flask, I next devised a means by which the model and setting might be made in one piece, which I achieved in this way—I take a piece of ordinary pink wax, soften it in hot water, and press it up to fit the bite-model—this must be very accurately done, and that, too, without thinning the wax—pressing up the rugæ carefully with a burnisher or other convenient instrument; mount the teeth upon this and try in if necessary; if all is correct, heat again in hot water and press

up carefully, then cool it in cold water. Stiffish plaster is then mixed, the first part of the flask half filled. The case is now inverted and filled, reverted and inserted into the plaster in the flask. The plaster is then built up to and over the edges of the teeth. When hard it is soaped, and the other half closed and lightly clamped. When hard, open and wash out, and we have then a mould composed of but two pieces. This may now be packed with the absolute certainty of being a *fac-simile* of the wax set in every particular when vulcanised.

I claim for this method a vast saving of time, trouble, and material, and also a more accurate fit. The time and trouble of taking a duplicate is avoided; the permanent model is retained; the bite is very rarely disturbed; there is very little superfluous rubber wasted, and the case requires much less time and trouble in finishing; the piece slips into its place in the mouth without the usual touching up, the vulcanite not being forced into unnecessary undercuts and interstices, as when vulcanised upon a model.

I also hit upon a plan of diceing the fitting surfaces of cases, which is very simple, ornamental, and useful, helping to steady and increase the suction of a case, and having the further advantage of precluding the possibility of the surface being tampered with without detection. This is accomplished thus:—Take a piece of netting the pattern of the plate, and a piece of tissue paper of the same size, place the tissue paper on the netting, and the netting on the model, before closing the flask. They both become embedded in the vulcanite, but will wash off with a brush when vulcanised, leaving a much cleaner surface.

I am indebted to Dr. Best, of London (formerly of America), for a hint, which I hope he will pardon me giving to those gentlemen present who do not know it—namely, how to acquire the best adhesion in complete suction cases. By scraping the model all along the labial margin of the gums (avoiding the buccal muscle), then along the lingual margin, and finally across the distal margin of the palate, using afterwards a piece of very fine sand-paper, it will be found that the suction of a case made from a model thus treated is far greater than that acquired from the use of discs,

chambers, scratches, or other like contrivances. Having the further advantage of strength and appearance, the device of carving the rugæ on the lingual side of the case helps also to strengthen and embellish a case, and is rather more pleasant to the wearer. I have here several pieces in plain and gum teeth. Those with the gum teeth are constructed by myself personally, after the manner explained above. I use very large wheels in cutting the blocks, and cut all on the large flat surface of the stone, instead of on its edge, and I never use paint. The long, clean, regular cut makes the joints look closer and better. I should like to have shown those gum cases in the mouth, feeling satisfied it would help to stimulate others who do not use them to an endeavour to do so in future, as far as practicable.

A great deal is being said at present as to the immense advantage to be gained from the use of celluloid, because of its lightness, colour, and rapidity of manipulation. I beg to submit to your notice two cases—one in celluloid, by Dr. Best; the other in vulcanite and gum teeth, by myself; both for the same mouth. I think the gum set can hold its own, even in the hand, but in the mouth would be by far the more natural, occupied much less time in constructing, and is actually two pennyweight less in weight. Celluloid undoubtedly looks well in the hand when new, but never looks like the gums in the mouth, and if used by a constant smoker, very soon assumes an appearance scarcely recognisable from black rubber, which, for a gum, is most unattractive. It is at no time capable of bearing comparison in the mouth with the beautiful gum blocks manufactured by Mr. White, of Philadelphia, either for colour or translucency—this much being admitted by even the greatest advocates of the celluloid, as they generally use it in combination with gum teeth.

About three years ago a patient of mine informed me that a niece of his had married a gentleman practising Dentistry in America, who offered to make an upper and lower set for him, provided he would send him reliable models. I presented him with the models, bite and all. The case was returned, made in celluloid and gum blocks, having

gold fillings inserted in several of the front teeth. The patient did not relish the idea of fillings, but I ultimately persuaded him that they were a great improvement, for it was a very nice set, but entirely without character, and required the fillings to redeem it in some measure from its otherwise far too stiff and regular appearance. I saw these cases lately, and the gum blocks were the only portion that had escaped the vile stains of the tobacco. I hold, therefore, that a material so permeable to stains loses considerably its apparent merit; and strangely enough I have, while writing this, a circular put into my hands, from which I see that we are offered instruction in the new mode of making celluloid cases at the small charge of £8, and the machine to cellulose it at £20.

Ere closing, gentlemen, I would like to say that, in my opinion, too little attention is being paid to the æsthetic culture in the mechanical portion of the professional education of our Dental students. Were they recommended to study drawing, painting, and modelling, we would shortly have a great deal less of the incongruities that so often offend us.

At a meeting of Dentists I remember hearing one of them say that any mechanic was on a par with a mechanical Dentist, as it involved no greater skill than any other mechanical art, and he was correct, so far as his appreciation of it went, at least judging from what I have seen of his skill.

If arranging teeth to look like the handle of a toothbrush bent into a person's mouth be the ideal, then he must be considered to have attained a considerable eminence in his profession. But I hope for better aspirations from our students, and I close with thanking you for your patient hearing, and shall be glad to answer any questions you may be disposed to ask of me.

ON SOME OF THE DISEASES OF THE ANTRUM AND THEIR TREATMENT.*

By J. M. ACKLAND.

MR. PRESIDENT AND GENTLEMEN,—After looking over the titles of the papers previously read before this Society, I had some little difficulty in finding a subject of practical value which had not already attracted attention. However, on consideration I thought we might find plenty of room for discussion on “Some of the Diseases of the Antrum and their Treatment.”

The antrum is supposed to have been discovered by an anatomist named Casserius in the early part of the seventeenth century, but it was first described by Nathaniel Highmore in 1651, hence its name, the “antrum of Highmore.”

It is not my duty in a paper of this sort to enter into any minute detail with regard to the anatomy of this cavity, I will therefore only give a rough description of it. Holden compares it to “a triangular pyramid, with the base towards the nose, and the apex towards the malar bone,” and mentions the occurrence of “thin plates of bone which are often found extending across the antrum.” This maxillary sinus, as it is sometimes called, may extend into the malar bone, and there is often a great difference in the size, shape, and elevation of the floor of the cavity in the two sides of the same jaw. As a general rule, however, it is larger in the male than in the female, and probably diminishes in size with extreme age. Internally we find a lining of mucoserous membrane, which, in the healthy state, allows the air to enter the sinus through an opening in its posterior wall. In young subjects the walls are comparatively thick, but as age advances they gradually become thinner. Occasionally a second small aperture exists behind the normal one, found in front of the unciform process of the ethmoid, and close

* Read before the Students' Society of the Dental Hospital of London.

behind the infundibulum, opening into the middle meatus of the nose. Fossæ of considerable depth are often found in the floor of the antrum, more particularly at its anterior and posterior extremities. The membrane derives its nervous supply from the posterior dental branches of the superior maxillary division of the fifth cranial nerve.

Having thus briefly run over the chief points presented in the healthy sinus, we must turn to the subject before us, viz. the diseases to which it is liable and their treatment.

The antral cavity is subject to many diseases of a more or less formidable and dangerous character. All of them commence either in its mucous lining, the bony laminae of which it is composed, or the fangs of the teeth, which form projections at its lowest part, and although several of these affections do not, strictly speaking, come within the province of Dental Surgery, there are, nevertheless, many others which are due, either directly or indirectly, to the irritation produced by diseased teeth. It is to cases of this latter kind that I would more particularly ask your attention for a few minutes this evening.

The teeth which are generally found to bear the closest relation to the antrum, and any one or all of whose roots may pierce its floor, are the canines, bicuspid, and first and second molars; but there are cases on record in which even the fangs of central incisors have communicated with the cavity. We must therefore bear in mind that the root of any tooth may possibly lead into the antrum.

Of all the diseases of this cavity that we are called upon to treat we shall find none more frequent than that of supuration, sometimes called "empyema" and sometimes—though wrongly—"abscess" of the antrum. This is an affection arising from the chronic inflammation of the lining membrane of the sinus, and the word abscess does not convey a true idea of the real nature of the disease.

When inflamed we find the mucous membrane secreting, with more or less rapidity, a thin purulent fluid of extremely offensive smell, which in many cases is got rid of by the small orifice leading into the nose. When, however, the membrane becomes rapidly swollen and inflamed this loop-

hole of escape for the pus is closed, and the patient, who before felt a dull but continuous pain about the region of the affected maxilla, now finds the pain increasing in extent and becoming throbbing in character. The cheek is hot, flushed, and more or less swollen, and frequently we find symptoms like those of acute abscess, with rigors and fever. The matter accumulating we get the whole cavity expanding, and the malar bone lifted up. The molar teeth on that side appear elongated, and if the secretion be still further allowed to increase we find the palate presenting a flat or even convex surface, and in the more protracted cases the floor of the orbit is pushed up, the eye being thrust forward, stretching the optic nerve, and so affecting the vision.

The *treatment* of chronic inflammation as given by Hunter in his treatise on 'Diseases of the Teeth,' published in 1771, is so very good that, although it has been so often quoted, we shall do no harm by repeating it once more. He says:

"The first part of the cure, as well as that of all other abscesses, is to make an opening, but not in the part where it threatens to point, for that would generally be through the skin of the cheek.

"If the disease is known early, before it has caused the destruction of the fore part of the bone, there are two ways of opening the abscess; one by perforating the partition between the antrum and the nose, which may be done; and the other by drawing the first or second grinder of that side and perforating the partition between the roots of the alveolar process and the antrum, so that the matter may be discharged for the future that way.

"But if the fore part of the bone has been destroyed an opening may be made on the inside of the lip, where the abscess most probably will be felt; but this will be more apt than the other perforation to heal, and thereby may occasion a new accumulation, which is to be avoided if possible by putting in practice all the common methods of preventing openings from healing or closing up; but this practice will rather prove troublesome, therefore the drawing of the tooth is to be preferred, because it is not liable to this objection."

The treatment of this malady is in the majority of cases successful, though sometimes lengthened according to the age and general health of the patient. To afford relief we are bound to get rid of the pus, and must therefore secure a good free opening from the antrum into the mouth by removing any badly decayed teeth or stumps on that side, beginning with those which give the greatest pain on percussion. If, however, all the patient's teeth are sound the plan which is strongly recommended and generally adopted is to make an opening just above the first molar on the outer surface of its walls.

Should, however, the extraction of a tooth be persisted in, it is still advisable to select the *first* molar as being the one most liable to decay, whilst its roots, one or all of them, are amongst those generally found to pierce the floor of the antrum, and, last but not least, because its loss is not so easily detected as that of the bicuspid or canine would be.

On probing we may still find that we are unable to get into the cavity, or that the orifice is too small. We must then use a trocar, and either perforate the floor or enlarge the opening as the case may be.

According to Mr. Coleman we should have an opening at least one-third of an inch in diameter, for although in many cases the removal of a tooth will be followed by the discharge of matter, it is nevertheless desirable to increase the size of the communication so as to allow the purulent fluid free escape, and furthermore, that by means of a syringe the operator can thoroughly cleanse the cavity.

Here allow me to remind you that if the normal orifice leading into the middle meatus were to remain open, it would be impossible to completely empty the cavity of the antrum through it, as it is situated far above the level of the floor of the sinus.

Great care must be taken in the use of the trocar, as dangerous, and even fatal accidents have resulted from its being carelessly handled; and although we may have to use considerable force at times, we must remember that the walls of the antrum are thin, more especially at the floor of the orbit. To prevent such occurrences a good plan is to use a trocar

with a rim around it, about three-quarters of an inch from the point, and when not operating with this safeguard, it is advisable to place the forefinger of the right hand far forwards on the shaft of the instrument, so as to be prepared for any sudden giving way of the floor of the antrum.

Having obtained a good sized opening we next proceed to thoroughly wash out the cavity by injections; first with warm water to remove the matter and any inspissated secretion left in the antrum. This must be repeated daily until the secretion of the mucous membrane becomes healthy, and during the intervals a plug of lint is often used to keep the opening from entirely closing.

But, according to Mr. Coleman, a better method is to make a small plate to fit over that part of the jaw, to which is attached a small tube of gold or platinum about one tenth of an inch in diameter, fitted so as to project about one third of an inch into the antrum through the orifice previously made. This will prevent purulent fluid running into the mouth, and should the opening into the nose be clear, the patient may easily wash out his antrum by taking a mouthful of fluid, closing the nostril of the opposite side with his finger, and then compressing his cheeks.

This plan is especially useful in true cases of antral disease, which are sometimes under treatment for years. Another very similar contrivance for keeping open the artificial orifice, is to have a plate and tube fitted as before, the top of the tube, however, resting flush with the floor of the antrum, its other extremity being closed by a plug of cork. The plate has the additional advantage of helping the orifice to heal when it is no longer needed, by cutting off the tube and allowing the patient to wear the plate only for a short time. The passage of air and fluid from the mouth to the antrum is thereby avoided, and as a consequence the healing of the wound is greatly facilitated; should, however, the opening refuse to unite, by applying a small quantity of nitric acid to the edges we may produce granulation and adhesion. If after the injection of water we find that the secretion of pus continues, we may use an astringent lotion, such as sulphate or chloride of zinc, weak carbolic acid, or

two or three grains of nitrate of silver dissolved in an ounce of distilled water. In many cases Condyl's fluid has proved very efficacious, as has also a dilute solution of phosphoric acid, the strength of the solution being gradually increased. But in treating chronic inflammation we must have a variety of stimulating or astringent injections, as the parts covered by mucous membrane often become accustomed to a particular remedy, and after a time fail to be affected by its use. The amount of benefit will therefore be in proportion to the skill with which they are varied and applied. Many cases yield to treatment after the second or third injection; these must be either the result of an abscess at the root of a tooth having burst into the antrum, or a very mild form of suppuration. On the other hand, we often get obstinate cases. The reason being that the orifice is too small, and consequently we cannot thoroughly cleanse the cavity between the septa, or in the fossæ previously mentioned.

As an additional safeguard we should do well to carefully wash out the cavity with warm water in every instance prior to the application of an injection.

(To be continued.)

THE REMOVAL OF STUMPS GIVING RISE TO CHRONIC ALVEOLAR ABSCESS IN TUBERCULOUS PATIENTS.

By HENRY BLANDY, L.D.S. I. and Glasg.

It is scarcely necessary for Mr. Gurnell Hammond to raise the question of tuberculosis to gain the condemnation of teeth and stumps giving rise to chronic alveolar abscess. Tomes, Salter, Garretson, and Harris all recommend their extraction, and, as far as I am aware, it is the universal practice—or ought to be. Mr. Hammond might have stopped at the word “patients” to have obtained a negative answer to his question. The reasons why stumps should be extracted

are so numerous and so well known that it is entirely unnecessary to enter into them here.

The question of the relation of both inflammation and abscess to tuberculosis is a much wider one, and is, I apprehend, the point Mr. Hammond wishes to be considered. Now, Dr. Green states in his 'Pathology and Morbid Anatomy,' in reference to the development of tuberculosis, "that the products of various inflammatory processes (*for the most part of inflammations of slight intensity*) may constitute the infective agents." Again, he states that acute tuberculosis is most common in the scrofulous, and that the cases arising where there are no such products discoverable of a previous inflammation are very rare. But phthisis, to which Mr. Hammond more particularly refers, is also induced by occupation, dust, confined atmosphere, sedentary life, sexual excess and debauchery, indigestion, mal-nutrition, chronic dyspepsia, alcoholism, faulty hygiene, improper feeding, pneumonia, typhoid and scarlet fevers, and perhaps most certainly of all by hereditary transmission. These are all debilitating diseases, and naturally militate against the formation, nutrition, and retention of sound and healthy teeth. The chances are therefore that the patient with phthisical tendency or phthisis has already a very indifferent set of teeth, and that by extracting them we shall not eradicate the germs of phthisis. Still, defective teeth in a state of chronic alveolar abscess may add one more to the long list of causes of phthisis, and if those practitioners who do not already extract such teeth—because they are such teeth—can be induced to do so by this latest appeal to their humanity it will be well.

I think it would be advisable not only to remove such defective teeth, but to abandon the habit of placing artificial teeth over stumps—a habit essentially uncleanly and vicious—practised by some who go in for the "no extractions and no pain" allurements. It would also be of great service if patients could be persuaded regularly to present themselves for examination and repairs before their teeth were too hopelessly gone.

In this regard it might also present itself to Mr. Hammond

whether the Dental inspection of schools, as in Paris, might not with advantage be advocated. Mr. Hammond refers to hospital practice amongst the poor, which brings us to a very important point, viz. phthisis being a disease characterised in its inception and course by great debility, when the bad teeth are extracted for the poor, can their salvation be further insured by the supply of masticating substitutes, and if so, how? It is wonderful what an improvement in general health and tone the mere removal of bad teeth effects, but it seems incomplete to stop short of the superstructure when the foundation is laid.

In conclusion, I wish Mr. Hammond every possible success in his interesting inquiry, and look for a valuable discussion.

1, Postern Street, Nottingham.

PRACTICAL HINTS FOR YOUNG PRACTITIONERS.

By AN OLD ONE.

TAKING IMPRESSIONS.

With wax.—Let the wax be rather slowly softened in water, commencing with it rather warm and increasing the heat until it is as hot as the hand can comfortably bear. Knead the wax with the finger and thumb, and it will not only be thoroughly soft but tough and homogeneous.

If once made too hot, and so with scalded surface, put it aside and take fresh, or no good impression can be expected.

Just before putting into the mouth, dip the surface quickly in and out of cold water. This will prevent “sucking.”

Keep the wax about a minute in the mouth and disengage it gently. If (in a lower) raised much in the front it will be *depressed* at the back, thereby *practically increasing the height of the back teeth or gums on the model*, whereby many a plate has been found to have a fore-and-aft rocking motion; or if the model has been for a bite only, the upper artificial

molars have been found mysteriously and unexpectedly short.

Never “wriggle” an impression much in disengaging it, or both the teeth and gums of the model will be broadened and thickened, and any plate made on it must be a “loose fit,” which means no real fit at all.

Better still, *never use wax impressions* except for making “bites” and consultation models, or adapting trays for taking more accurate impressions—with Stent’s, Godiva, Plaster of Paris, &c.

Trays that fairly fit having not less than quarter of an inch space around teeth and gums give a uniform pressure, and thus take the most reliable impressions.

With “*Stent’s*,” “*Godiva*,” or similar compositions, soften with two thirds boiling water, dry on a cloth, warm the tray, and also the surface of the composition that is to go into it, and *see that they adhere*, else the composition may “spring” from the tray or “suck” to the teeth. Do not be in a hurry, but let the body of the composition *set a little*, and just before placing in the mouth warm the surface over a spirit lamp. This will cause the more solid body to force the softened surface into every crevice, making an extra “sharp” impression, whilst the whole will be the sooner ready to remove. Keep it in the mouth with slight pressure only—to allow displaced spongy gums or muscular attachments to reassert themselves—for about three and a half minutes, or until a mark made with the thumb-nail is seen to partly fill up or lose its distinctness. Remove as carefully as with wax, and immediately place in *cold water* to set the surface and so avoid shrinkage.

When teeth have touched the tray, and so left no substance in which to “stick pins” for casting, cut the points off the pins, heat the ends, and they will attach to the thinnest particle of composition.

With gutta percha,—(I prefer the black or rather brown gutta percha of commerce)—soften in about half boiling water, slightly soap the fingers with scented soap to avoid adhesion, soap or slightly smear the surface with glycerine, never oil (I prefer soap), to prevent adherence to the teeth,

which should be well moistened with saliva. Test for lime as with Stent's or Godiva composition, and also plunge immediately in cold water.

With plaster of Paris.—Use new superfine plaster. Place the patient's head slightly inclined forward with the chin hanging downwards, so that any surplus plaster may have *no chance* of falling into the throat. Mix with supersaturated solution of alum water, within easy reach of patient, and place into the mouth at once, pressing the tray immediately, but gently, into its place, and simply *hold it there without again moving it*.

Take care to use, as nearly as possible, *only sufficient* plaster. Pile it up to a *point* in the palate of the tray, the object being to avoid shutting in of air bubbles. (I never take lowers with plaster.) If there are teeth standing or very overhanging gums, mix the plaster just so thick that it will not run off the tray, this will enable it to break easily, and so come out of the mouth, when the pieces can be collected and readily put together. In other cases the plaster may be thicker.

As soon as the tray is in the mouth, take about the size of a Spanish nut of the plaster, and work it between two fingers and a thumb, and as soon as with their *warmth* it has set so hard that it cannot be crushed by squeezing (usually about three minutes), the impression may be removed.

Should it adhere, as it often will, very firmly to the palate—indeed seem immovable—*do not try* to remove it only by the handle of the tray, but also pass one finger as far backward and upwards under the cheek as possible, and so help it *down from the back*, when it will generally come at once.

For casting, soak the impression with water or oil until it will *absorb no more*, wipe the surface with blotting paper to take away any free oil, fill up any air holes, &c., with wax, and cast as usual. Several equally accurate models may be obtained from each impression, but it is very necessary to oil afresh for each.

I have seen great mess and much ceremony gone through in taking plaster impressions, to avoid which I put a little

alum water in one tumbler and some dry plaster in another, mix with a teaspoon, and seldom see a speck about. This any one may do with coolness of action and a little practice, but nevertheless I invariably take the precaution of placing a cloth over my patient's dress or waistcoat to prevent accidental damage.

Plaster going into the mouth in a semi-fluid condition rarely or never—if properly managed—causes nausea; but should this supervene, request the patient to breathe deeply and steadily, keep *yourself* cool to give the patient confidence, hold tight, and do not remove before the plaster is properly set, or the impression will be useless, and your patient will have the unpleasantness and you the mortification of having to repeat the process.

Do not forget whilst removing the impression to ask the patient to save all pieces remaining in the mouth before rinsing.

Plaster impressions are so perfect, that a plate will often cause severe headache, usually over the eyes or temples. When this is the case, ease the plate entirely away or smooth it off a little at the centre of the back part of the palate. To illustrate the necessity for this, place your thumb very firmly at the back part of your own palate, and probably in a few minutes you will feel the headache alluded to.

Should a patient feel sickness whilst an impression is being taken, you may reasonably expect that the plate or plates will cause nausea also; when this is so, to ascertain how to obviate this most distressing symptom, open the mouth very wide and, carefully *avoiding the tongue*, pass the tip of the finger gently over the back part of the palate as far as the plate covers when in; if this causes nausea the plate must be lessened *in the palate*, but if not, pass the finger a little over the side of the dorsum of the tongue; if this instantly produces retching, you may know that the *inner cusps* of your artificial upper and lower molars and possibly the back parts of the plates must be reduced freely. Sometimes both are required, but not often.

(*To be continued.*)

Hospital Reports and Case-Book.

CASE OF REFLEX PAIN.

By W. H. SKEET, of New Plymouth, N.Z.

A GENTLEMAN wished to have a tooth stopped—the second upper molar right—which he said had been troubling him for some time. I examined the tooth carefully, but could find no trace of caries, nor was the tooth sensitive to percussion.

Upon a further examination of the mouth, I found the second inferior molar on the same side very much decayed. It had been stopped with amalgam, but caries had gone on under it. I advised removal of the stopping, to which my patient consented.

After doing so and applying carbolic-acid dressing, the pain ceased, and I dismissed my patient with instructions to call the next day for further treatment.

When he called again he said the lower tooth had been troubling him, and he insisted on having it out. Immediately it was extracted the patient experienced the most severe pain in the *upper* tooth, which lasted for some minutes.

I have seen several cases of reflex pain, in one of which, strange to say, the same teeth were affected as above. In none of these cases, however, did the reflex pain continue after the removal of the tooth.

THE 'Transactions of the International Medical Congress,' published in four volumes, were to be ready on December 31st, 1881, and may be ordered through any bookseller, or direct from J. W. Kolckmann, 2, Langham Place, W. The proceedings of the Dental Section will be contained in vol. iii, which can be had separately for half a guinea, but a limited number of the Transactions of each Section will be published separately.

British Journal of Dental Science.

LONDON, JANUARY 2, 1882.

THE DENTAL CONSTITUENCY.

THE current number of the 'Missouri Dental Journal' contains an article from the pen of Dr. W. C. Barrett, entitled "European and American Dentistry Compared," which is written in such an evident spirit of fairness, as to almost absolve it from the proverbial obloquy to which comparisons lay themselves open. Of course, Dr. Barrett claims that the general run of American Dentists are more skilful and intelligent than those of any other country, and really the knowledge at our command does not warrant us in denying the assertion. Indeed, on the principle *omne "ignotum pro magnifico,"* we ought to give in our firm adhesion to it. Fortunately, however, it is not a question to which in the interests of science a definite answer is demanded, and we prefer to pass on to some of Dr. Barrett's statements, which are more debateable. For instance, the difference between the Dentist's *clientèle*—or, as we prefer to call it, constituency—in England and America is a point which is well worth a little consideration. Dr. Barrett argues that the English Dental constituency is much more limited than the American. In England people are divided by strictly defined lines into three classes, upper, middle, and lower. "The lower, or labouring class, which makes up the great bulk of the rural population, has few Dental wants and makes but little demand on the time of the Dentist. . . . It takes all their time and money to supply food for the teeth which nature leaves them. . . . They are ground down in utter poverty with little hope of ever rising above their present misery and obtaining entry into the middle class. As paying

patients they are for ever beyond the reach of the Dentist.” The upper classes, on the other hand, are, according to Dr. Barrett, exclusively in the hands of the fashionable Dentists, whose practices are handed down like an entailed estate from father to son. “There thus remains but the restricted middle class, the tradesmen, professional men, and gentlemen of comparatively small means to form the *clientèle* of the great body of the profession.” It is refreshing to pass from this sad picture of poverty and oppression, vested interests and hereditary privilege, to the Arcadian simplicity of the arrangements in the States. There the canal driver of to-day may be at the head of the Government to-morrow. The poor barefoot boy, reared in pinching poverty, may become the millionaire, spending money with a lavish hand. Each parent knows that his children may rise to distinction, and “if respectably raised, may associate with the educated and refined.” But naturally “they cannot be received into those circles in which it is his ambition that they should shine if their teeth be filthy or decayed or absent, and hence arises the necessity for the Dentist’s services in every household.”—Q. E. D.

If we were captious critics, which we trust we are not, we might suggest that if it is only the exigencies of social ambition which bring the canal driver and his hopeful offspring into the Dentist’s office, it might possibly be better both for the Dentist and themselves if they had remained away. For there is just the risk that whatever gain of respect may accrue to them in the social circles in which it is their ambition to shine, will be balanced by a loss of self-respect to the Dentist, who sees himself and is seen by others falling into the same plane with the barber and corset-maker. It may be humbly submitted, in fine, that if the position and prosperity of Dentists in America depend so largely, as Dr. Barrett appears to argue, on the æsthetic as distinguished from the sanitary requirements of their patients, we, here in England, have less cause than we imagine to envy our brethren across the water. We hope, however, for the credit of the great American nation, that Dr. Barrett has somewhat misrepresented his countrymen,

and that their frequent visits to the Dentist are in reality prompted by a true regard for physiological requirements, or suggested, perhaps, here and there by the grumblings of that omnipresent and protean demon dyspepsia, rather than necessitated by social rivalries. If this be so, if it is found that in America the modern hygienic ideal has already filtered down into the lower strata of society, we have good reason for hoping that the same process may occur amongst the more slowly moving elements of our own somewhat antiquated civilisation, where hitherto every Dental service but extraction has been regarded as a luxury for the rich, rather than as a necessity which ought to be brought within the reach of all.

It is not from any selfish or class interest in the prosperity of Dentists that we have so repeatedly urged the advisability of popularising Dental aid. It is from an honest desire for the health and welfare of the lower classes. On any system Dental work amongst the poor can only be just barely remunerative, and the incentive to it will always be quite as much the experience as the payment derived from it. Still, we look forward to the time when the constituency of the English Dentist—or, in other words, his possible patients—will almost coincide with the whole nation. There are two reasons now why the poorer classes do not call for the Dentist's aid; in the first place, they do not, except in the case of severe toothache, feel the need of it, and, secondly, they cannot afford to pay for it. The first thing to be done in any attempt to extend the beneficial area of Dental service is to make the need of it more widely felt; then, and then only, will it be necessary to adopt a practical scheme for meeting the demand. In England we may hope that the gradual improvement in primary education, the teaching of physiology in board schools, and the various other means by which the laws of health are being popularised, will in time make the people realise more clearly the importance of care of the teeth. In France other agencies are being set at work, as we have announced in recent numbers. There, characteristically enough, a scheme has been passed whereby the pupils of the primary municipal schools of Paris will

become entitled to gratuitous Dental aid, and it is not difficult to imagine that those pupils, who in their childhood have experienced the benefit of the Dentist's skill, will be reluctant to surrender it when grown up. Thus a healthy public opinion with regard to the necessity for Dental aid will gradually grow up among the poor of Paris, and wherever a similar scheme may be set on foot. But a propaganda of this nature is alien to our methods on this side of the Channel, and we doubt whether any amount of cordiality on the part of the Lord Mayor would have materially aided M. Taillebois in the philanthropic endeavours which he describes in his letter to us. The best prospect for the extension of Dental aid to our poor lies, as we have argued in a previous article, in the future extension of the provident system, on which we must rely for bringing the English counterpart to the canal driver, if not to the head of the Government, at any rate, into the position of a self-respecting and respected member of society.

It is not encouraging to hear that within two years of the formal recognition of Dental teaching by the State the oldest, and for a long time the only, Dental educational institution in the west of England—the Dental Dispensary of Plymouth—was very near “going to the ground,” as they say in the Fatherland. The danger is now happily past, and the profession is to be congratulated on the fact; but little more than twelve months ago it still remained doubtful whether the charitable folk of Plymouth would come forward handsomely enough to allow of the work of the Dental Dispensary being carried on. Considering that the institution can be worked for the very moderate sum of £26 a year, its permanent existence ought not to have been in doubt for a moment. However, an effort was made, the dispensary was rescued from a bankrupt's death, was transferred to a more commodious dwelling, and the hon. sec. has now the pleasure of issuing a most satisfactory report. During the past year 1912 operations have been undertaken, including 1702 extractions, 2 gold fillings, and 87 amalgam fillings.

The usual courses of lectures, as announced in our Students Supplement, continue to be delivered by Messrs. Spence Bate, F. H. Balkwill, and W. V. Moore, and we trust that the institution, which has now been in active work for twenty years, has still a long career of usefulness before it.

THE plate of an artificial denture has, as we know, often enough been the cause of serious danger to life, but our reading has not till now brought us across a case in which life was saved by the same instrumentality. The following case rests only on newspaper evidence, which, as every one knows, is not always of the rigorously exact nature which science demands; still the facts may be reported for what they are worth, in the hope that the full surgical details will be published in due course through the proper channels. A fortnight ago, a seaman was charged on his own evidence at one of the metropolitan police courts with attempting to murder his brother-in-law, a gold and silver refiner, by shooting at him with a revolver. The bullet entered the cheek above the mouth, was deflected by a metal plate attached to a set of artificial teeth, and lodged in the upper jaw. The injured man was taken to St. Bartholomew's Hospital, where the bullet was extracted, and it was stated that his life was saved by the artificial plate, which, we hope, will be secured for the museum of the Odontological Society. If we were a proselytising profession, what a pretty tract might be written on the case, with the view of converting all men into a belief in the beneficial use of artificial dentures.

It is to be hoped that the present active crusade against smoke in London is not to turn out a mere beating of the air. It is a question which has a very special and practical interest for the Dentist, who, so to speak, lives on the light of day, and whatever we can individually do in the way of abating the nuisance by setting our own hearths in order, and helping to preach the crusade to others, will be done,

we are sure, by each of us. Still it is to be feared that individual effort can do little. If there were a London House League, which could prevail on the big landlords to give compensation for unexhausted improvements, we might possibly hope to see a sufficiently extensive adoption of the ingenious contrivances now on view at South Kensington. Otherwise, we fear that London fogs will long continue to be everybody's pest in general and the Dentist's in particular. *Pro aris et focis* is an excellent motto for freeholders.

THE Committee of the National Dental Hospital, whose eyes have so long been fixed on *vacancy*, have ceased, we are glad to see, to advertise their preference for the English Dental licence. The post of Dental Surgeon is still open, but any Dental licentiate may now compete, and it is to be hoped that the vacancy will ere long be filled up. What are our young practitioners thinking of to let such a post go so long a begging? Are they too modest or too prosperous?

IN an article in the 'Missouri Dental Journal,' comparing European and American Dentistry, on some points of which we have commented in our leading article, Dr. Barrett, of Buffalo, N.Y., gives the following rather *couleur-de-rose* picture of our recent progress in the matter of Dental education:—"It is not at all certain that the next generation will not find that England has outstripped us in educational advantages. They are founding Dental hospitals all through Great Britain, and establishing professorships in Dentistry in connection with them, which may be destined to solve the question of professional education for us, as well as for them. It is not that the college has a hospital in connection with it; the hospital is the college. The system is not as yet developed, but it gives excellent promise of good." It is pleasant to have such nice things said of us, but we ought to try and deserve them a little more.

MR. S. LEE RYMER has been nominated by the Council of the Odontological Society as President of the Society for the ensuing year, a well-earned honour.

Dr. Andrieu, President of the Odontological Society of France, writes to us as follows :—" Will you kindly inform your readers that the " Société Syndicale Odontologique " of France has no connection whatever with the " Cercle des Dentistes " or the " Chambre Syndicale des Dentistes Français," mentioned in the December number of the 'British Journal of Dental Science.' I need not remind you that it was the " Société Syndicale Odontologique " of France which directed the attention of the late Prime Minister of France to the necessity of Dental reform, and it was our society which proposed a Dental law similar to the English one."

IN a recently published brochure, which we have already noticed in these pages, Dr. Magitôt gives the following lamentable picture of the Dental departments of some of the Paris hospitals :—" Make your way some morning to the room on the ground-floor of some hospital known as the Dental Consulting-Room, and you will assist at the saddest of ceremonies, a veritable orgie of extractions, performed on every comer and for every case, without direction or control of any sort or kind. Of diagnosis there is none, and as little of therapeutics. Always extraction, nothing but extraction. But the operators, you will say, are doubtless chosen from the staff of the hospital, admittance to which is apparently only allowed to those who are studying there? Not a bit of it. The externs, and much more the interns, have long ago thrown up the disheartening labour, and it has fallen to some local apprentice who wants to try his hand, or even to the porter." Bad as the Dental arrangements are at some of our general hospitals, we do not think that any have yet fallen as low as that.

The Dental Examiner.

[*Note*.—Dental materials and appliances intended for notice in the “Dental Examiner” should be sent to the Editor at 11, New Burlington Street, W. All preparations not generally known should be accompanied by a lucid description and a clear statement of their composition. The formulæ supplied *will not be published* unless a written permission is given by the maker.]

MATERIALS EMPLOYED FOR TAKING IMPRESSIONS OF OF THE MOUTH, &c. (*continued*).

WITH all its excellent qualities the “Godiva” composition is slow in setting, and in particular cases, where teeth are undercut, it has a tendency to drag, giving to the appearance of the model—particularly of prominent teeth—an elongated character. To remedy this defect Mr. J. Wood, of Dumfries, a few years ago proposed another composition, containing more solid matter and less gum. The Acme modelling composition has decidedly many admirers among the best operators of the day, and it must be allowed that it does not show any inclination to shrink, sets very rapidly, and is free from stickiness. For the taking of bites it is rather stronger than others, and may be treated exactly in the same way as the “Godiva” alluded to in our last paper, and a softer kind is also kept for renewing material that will no longer work readily. All impressions should be sharp, and if properly taken—by being left in the mouth long enough—a faithful model can be secured.

While writing on this subject we must acknowledge that Mr. Stent, of London, was the first to introduce modelling compositions to the notice of the profession. More than twenty years ago his compound was in full use, and it remains still a very useful preparation, the consumption of which amounts to many tons annually. It is sold in three colours, and we would suggest to Mr. Stent the advisability of making each colour a different degree of hardness. The pink might be considered the softest quality, yellow the medium, and white the

hardest. As it is, all colours appear to soften at the same temperature, and when different varieties are all made of the same colour they get mixed together, unless very great attention is paid to their classification. We would also advise that a special quality, possessed of as *much strength as possible* and with a distinctive colour, should be made for taking bites. The value of these preparations for this purpose cannot be over-estimated, but they are at present too brittle. A quality should be made and called "bite composition," possessing more strength, but at the same time capable of being modelled to any ordinary month.

DENTAL RUBBERS.

INTRODUCTION.

WHEN we bear in mind the quantity of india rubber now made use of for Dental purposes it does seem remarkable that so little has been written about its manufacture and less about the purity of the various qualities. Even those authors who have written on Mechanical Dentistry and entered so fully into the make of vulcanite pieces appear to ignore the material and its manipulation. Our province in the Dental Examiner is to receive and examine materials as they are sent to us, to suggest improvements where we think they are desirable, and freely to condemn whatever we consider unsuited for the purposes for which it is proposed. In turning our attention to Dental rubbers we enter upon a subject that has before occupied our attention, and upon which we have also had to write, but the last twenty years have added so many new varieties, and opened up so many modes of procedure, that the examination will have to be approached in a very different manner. It has been said that not one man in six knows how to wash his own face properly, how little then do the generality of Dental practitioners know correctly even the commonest processes they are called upon to follow. To harden Dental rubber appears a simple matter enough, but to do so, so that it may maintain its best qualities, is more difficult than most persons imagine, and we are prepared to prove that a large percentage of the

dentures so manufactured are either over-steamed or insufficiently hardened. We have thermometers that commonly vary to the extent of 6 or even 8 degrees, and we have steam-gauges that differ to a much greater extent. The usual thermometer is frequently marked too low, the steam-gauge is commonly set too high. The first thing necessary, if we want to produce the best results, is to get a registered thermometer, one that has been tested and found to be correct, and from this thermometer the steam-gauge should be regulated. It is easy enough to make a note of the inaccuracy, or to see that the thermometer is reset. The careful workman will do this at least once a year, for strange as it may appear an old thermometer will after long use vary slightly. The steam-gauge should never be depended upon *by itself*; it is always safer to use *both* heat and pressure register. Having satisfied ourselves that we are correct in these particulars each Dental rubber should be examined by itself, trying to avoid rapid vulcanising. We are quite aware that sometimes time is an object, but everyone should also know that a low temperature for a longer time will produce a better colour and a stronger body than a short time with a greater heat. It has been proved over and over again that at a low temperature and with perfectly dry models Dental rubber can be hardened without a vulcaniser, and that the results compare favorably with the steam process. Various preparations will require a longer or a shorter time, but the temperature should not *in any case* be higher than 310° , if perfection is desired; and we hope before we have concluded this series of papers to give such directions that success with every rubber will be the result. Too much confidence should not be placed in the printed directions of some makers, for, as we have stated above, their thermometers cannot always be depended upon; besides we have conclusive proofs that the external part of the vulcanizer does not agree with the internal, and that a copper boiler will mark a higher degree of heat than an iron one. Careful experiments were made some time ago, by which we proved that the flask is at a higher temperature than the external covering of the boiler, but with the steam-gauge the pressure should be ascertained, and it is easy then to calculate the exact heat.

Reports of Societies.

ODONTO-CHIRURGICAL SOCIETY.

ORDINARY MEETING, HELD 8TH DECEMBER, 1881.

ANDREW WILSON, Esq., L.D.S.Ed., Vice-President, in the Chair.

THE minutes of previous meeting having been read and confirmed, a letter was read from DAVID HEPBURN, Esq., L.B.S. Eng., thanking the President and members for the honour they had conferred on him.

The following gentlemen were then singly balloted for and duly elected members of the Society:—James Shiach, 1, Guildry Street, Elgin, and James B. Grant, Jersey, Channel Islands.

A paper was then read "On Vulcanite Dentures" by Mr. J. AUSTIN BIGGS, which will be found in another part of the Journal.

The CHAIRMAN thanked Mr. Biggs for his excellent and practical paper, after which

Mr BIGGS exhibited two very ingenious contrivances for rapid application of the cofferdam. As description of these would not be readily understood without diagrams, Mr. Biggs undertook to prepare illustrations for publication, along with the text, in a future number of the Transactions.

Mr. FINLAYSON presented to the Museum casts of the Odontome (Professor Annandale's) exhibited at last meeting.

CASE OF EPULIS.

Mr. WILSON exhibited an Epulis, which he had removed from the lower jaw of a patient in September. It was situated on the lingual border of the alveolar process, and extended antero-posteriorly from the canine to the distal margin of the first molar, while transversely it extended in front, from the teeth to the mesial line of mouth, so necessarily interfered with the movements of the tongue during mastication. Its seat seemed to be the alveolus of the second bicuspid, which tooth it had slightly displaced, and latterly had crossed the border between that tooth and the molar, showing as a small tumour on the outer margin. He had removed the second bicuspid which, along with an impression of the parts

previous to the operation, and another taken two months after it, he passed round.

RETENTION OF DECIDUOUS TEETH.

MR. WATSON.—I wish to bring before your notice models of one of those obscure and interesting cases of retention of the deciduous teeth long beyond their usual time, with absence of their permanent successors. The models were sent me by Frank Richardson, L.D.S.E. and I., along with the history of the case, which is that of a lady of nineteen, intelligent and healthy, though rather undersized in stature. She retains in the superior maxilla all the temporary teeth, excepting the two central incisors, which are permanent teeth, and stand very considerably apart from each other. In the inferior maxilla there is only one permanent tooth, that of the first left pre-molar, which is very small and dwarfed; all the other teeth belong to the deciduous set, and, moreover, are all in a very good condition in both jaws. There are therefore only three teeth of the permanent set present in the mouth, and no appearance of any more erupting. The arches of both jaws are very small, and present all the characteristics of childhood, which, as Mr. Richardson informs me, gives the patient's face a somewhat cat-like appearance. Retention of two or more teeth of the temporary set is pretty common, and is frequently hereditary; but in this case it does not appear to be so, as all the other members of her family have normal dentures. It would be interesting to know in such cases whether the permanent teeth are present in the jaws, and if not, why?

The CHAIRMAN then intimated that the next meeting, which would be held on 12th January 1882, would be a conversational one, devoted to the discussion on Mr. Biggs' paper, to the presentation of interesting cases in practice, and to the exhibition of models, illustrations, &c., of cases of interest. He hoped that every member would exert himself, and bring forward anything, either abnormal or interesting, or give a short sketch of any case presenting unusual difficulties in, or results of, treatment, which had come before him in his course of practice during the last twelve months.

VACANCY.

NATIONAL DENTAL HOSPITAL, 149, Great Portland Street, W.—Dental Surgeon. Applications by January 10th, 1882.

STUDENTS' SOCIETY OF THE DENTAL HOSPITAL OF LONDON.

ORDINARY MEETING, NOVEMBER 14TH, 1881.

ROBERT HALL WOODHOUSE, Esq., M.R.C.S., L.D.S., President,
in the Chair.

THE minutes of the previous meeting were read and confirmed.

Mr. Walter Harrison was unanimously elected joint Secretary, vice Mr. R. Price, resigned.

The following gentlemen were balloted for and elected members of the Society:—Messrs, G. Hooper, A. Fox, C. Roberts, A. Apperley, H. Pillin, A. E. Jones, P. Phelps, J. Petherbridge, G. Thomson, E. Latchmore, H. Burton, R. McAlpin, H. Baldwin, A. King, G. Skipp, A. Dorey, and C. Williams.

The following gentlemen were proposed for membership:—Messrs, Middleship, A. C. Woodhouse, A. T. Jones, Mc. Fay, and Dr. Sternfeld.

Mr. G. H. READ presented to the Society Reports of the Abernethian Society.

Mr. C. D. DAVIS, M.R.C.S., L.D.S., mentioned a case in which considerable systemic disturbance had resulted from difficult eruption of the wisdom tooth. The patient's health was perfectly restored upon the extraction of the tooth.

Messrs. T. S. AMOORE, L.D.S., C. ROBBINS, L.D.S., and H. G. READ, mentioned similar cases.

The PRESIDENT showed a pair of forceps (invented by his uncle) admirably adapted for removing the thickened mass of gum often found above slowly erupting wisdom teeth.

Mr J. S. AMOORE showed the cast of a regulating case which he had successfully treated.

The PRESIDENT and Mr. C. D. DAVIS made some remarks on the case.

Mr. J. ANDREW showed some enormous Scotch teeth.

Mr. W. HARRISON presented to the Museum a specimen of compound comminuted fracture of a left superior central. The tooth after fracture gave no trouble for twelve months.

The PRESIDENT announced that it had been suggested by the Council that a *Conversazione* should be held in January next. The proposal was carried unanimously, and it was resolved that a Committee be formed, consisting of the members of the Council (with power to add to their number), to make the necessary arrangements.

The PRESIDENT then called upon Mr. J. M. ACKLAND for his paper on "Diseases of the Antrum," which we have the pleasure of publishing in full in another part of the Journal.

A discussion followed, in which the President, Messrs. C. Robbins, L.D.S., J. S. Amore, L.D.S., W. Hern, L.D.S., W. A. Turner, L.D.S., W. Harrison, and G. H. Read, took part.

A vote of thanks was accorded to Mr. Ackland for his paper, and the meeting adjourned.

Literary Notices and Selections.

EXTRACTS FROM 'VERNON GALBRAY; OR THE
EMPIRIC:'

WITH NOTES AND REFERENCES BY THE AUTHOR.*

THE OBJECT OF THE BOOK

Is to expose the disgraceful frauds practised upon the public by the horde of charlatans who call themselves Dentists, and in the hope that it may thereby attract a larger circle of readers, that the author has deemed it advisable to embody the subject in a short story.

He has not attempted the portraiture of any particular individual, for it is the practice and not the person he desires to censure. His sole object has been to see whether exposure and ridicule may not furnish some remedy for a state of things the honorable portion of the profession never cease to deplore, and which could have no existence were the public once fully awakened to the true character of the advertising Dental charlatan.

After a short introduction, giving a description of the City of Rotterdam, the hero is introduced and his house and family described. Then follows :

Between the two windows was placed a large-sized clock-face—as large indeed as the space would allow—and over the clock a painted

* 'Vernon Galbray; or the Empiric.' E. T. Whitfield, 178, Strand. 1875.

board, on which was written in bold characters, "SAMUEL LEVI MOSES, CLOCK AND WATCH MAKER." Whether the proprietor was proud of his name it is difficult to say, but certainly its repetition would lead one to think so, for in the window on the right hand side a tablet hung stating that Samuel Levi Moses spoke English, while on the left a similar tablet intimated that Samuel Levi Moses made and repaired ARTIFICIAL TEETH of every description.

In front of one of the windows stood a work-bench, and seated at it was a very lean young man—indeed his face was painfully thin, and he had altogether so hungry a look that customers were often induced to make him little presents under the impression that he was starving.

This was not the proprietor—one saw that at a glance—but he had been with Mynheer Levi Moses for some years, and how he came to be taken as an assistant we will now relate.

Le Mo (for this was the familiar way in which Levi was addressed by the wife of his bosom and his intimate friends) was not possessed of any mechanical talent, indeed he could only do one thing—talk. His talking was something to listen to and remember, but work he first of all did not like, and secondly was not accustomed to. His father had been a clockmaker; and Moses followed his father's trade, but he knew very little about it and cared less. He was compelled to employ an assistant; and after making many changes, dropped upon the young man we have alluded to, who was miserably poor, and supposed to be not quite right in his mind; but it did not take his master long to find out that he was wonderfully clever with his fingers.

Doornspyk (for this was the assistant's name) came into Levi's shop one afternoon, and begged to be allowed to do any little job the master had on hand, in return for a mouthful of food, as he declared he was starving. Now it so happened that the clock-dealer had that morning had a serious disagreement with his assistant and coolly kicked him out; he was therefore placed in some difficulty to get the few repairs done which he had on hand, and moreover he was by no means an inhuman man. Seeing the hungry look of the poor fellow's face, he gave him a dinner first, and when he had had a good meal, inquired what he could do.

He found, greatly to his astonishment, that Spyk (as he called him) was really a good workman, but so miserably deficient in common sense, and so painfully nervous, that he had been wrongly regarded by the few persons who knew him as an idiot. He discovered—after he had been with him a few days—that he could secure his services for the merest trifle, and make of him a useful drudge, for the poor fellow was quite contented to sleep under the counter, and only too thankful if allowed literally to eat the crumbs that fell from his master's table.

Doornspyk had lost both his father and mother, but had previously to their death been apprenticed to a clockmaker in Amsterdam. He was there shamefully illtreated, half-starved and beaten by his master, until at length the little reason he originally possessed was nearly knocked out of him. At last, to escape a promised thrashing, he stole away at night from the house, and hardly knowing where he went, tramped on until he came to a canal, and begged a bargeman to allow him to lie down in his boat, covering himself over with a piece of tarpaulin. Here he fell asleep, and when he awoke, the barge had left its moorings and was well on its way to Rotterdam.

Poor Spyk felt that he could not get into a worse situation than the one he had escaped from; he therefore gladly accepted the offer of the bargeman to take him with him. But alas! when he arrived at Rotterdam he could not find employment, and at length, famished and footsore, entered the clockmaker's shop. Le Mo was shrewd enough to discover his worth, and agreed to take the half-starved boy upon trial. So he remained year after year, receiving but small salary, sleeping, as we have said, under the counter, and fed with any scraps that were left after his master and the family were satisfied.

Among Doornspyk's other mechanical accomplishments, he had gained some trifling knowledge of the construction of Artificial teeth. The hint was enough for Le Mo; he at once put in his window the tablet we have alluded to, "Artificial teeth made and repaired here," and soon managed to make this branch a lucrative part of his business. He was not long in discovering that the profit obtained by the repair of a clock was much less than that easily gained by the most trifling Dental work, and his attention being once called to the subject he speedily profited by it, managing to decoy a Dentist's assistant to give him some further information, and at once came to the conclusion that he had at length found the field in which he could best employ his superabundant energy.

He gave out among his friends that he could make artificial teeth at one half the charges usually asked, and gave his assistant so much encouragement in his new art by the purchase of tools and materials, that he was not long before he began to draw patients around him, upon whose mouths he practised, if not much to their advantage, most decidedly to his own.

We have before mentioned that his mother was an Englishwoman, and that she prided herself upon having taught her son the English language; this he now found to be of the greatest advantage to him, and although his knowledge was imperfect, and his accent bore powerful testimony to the land of his birth, yet he was able to make himself understood, and thus obtained a connexion among the poorer English residents in the City of Rotterdam; doing for them not only whatever they required in watch and clock mending, but

also attending to their mouths, in some instances gratuitously, for the sake of the experience he thereby acquired.

His father and mother had been dead some years, when the idea struck him that it would be well to extend this branch of his business, and gradually sink the clockmaker in the Dentist. But the people around him were so poor, that he considered he was throwing away his rhetorical powers by addressing them. His mother had never ceased to pour into his ear glowing accounts of her English home, the wealth of the English people, and their extreme liberality; nay more, she had expatiated upon their gullibility, the ease with which money could be made there, and how readily they were imposed upon by a specious address or a plausible announcement. These words he had weighed over many, many times; and he ardently longed to visit England, and try there the many schemes he had been maturing while living in Holland. He had asked himself, over and over again, what branch of art he should practise. Clockmakers he could stand no chance against, it must be something less familiar to the many, something in which he could employ his powers of persuasion, either the puffing of a quack medicine, or the possession of some pretended secret, giving him a good field for advertisement.

The more he went into Dentistry, the more he felt persuaded that this was the very business in which his peculiar talents would have room for display. From the moment the idea struck him, he looked to every guilder, and set down on paper the sum of his worldly wealth. His mother's little fortune remained intact, this he found he could now legally claim, and apply to the purpose he contemplated. "I vill leave this land of vog and vater," he soliloquized. "I have said it, and I vill keep my vord."

Madame Levi Moses still retained her good looks. Perhaps her figure might be considered somewhat too fully developed, but her face was so very fair and so beautifully smooth, and her cheeks so peach-like, that any alteration might have spoilt them. Her features had somewhat of the character we attach to the Dutch doll—very dark eyes and long lashes, a pouting little mouth, with lips so red and full, that, as the neighbours said, her husband might be excused if he kissed them oftener than is usual with married folk.

She was very contented and very happy; whatever her husband said was law, and she never thought of disputing anything he proposed to do, however preposterous it might seem to others.

Her constant answer was, "Yaw, yaw," and although she had been taught by her lord and master to speak English, she seemed to prefer using monosyllables, her general response being in the affirmative.

Business was over for the day. At Madame's feet was seated a child, very like her mother in complexion and colour of hair, though her animated expression seemed more to recall the restlessness of her father than the sleepy inanity of her other parent. Her

face was buried in her mother's lap, and her long hair contrasted well with the bright colour of the matron's petticoat. Le Mo was seated at the side of the stove, and his portly frame well filled the chair in which he had placed himself. He was now about forty, and young looking for his age, but beside his wife his swarthy complexion formed a striking contrast, and his strongly marked Jewish features were anything but prepossessing.

Taking him altogether, Moses was in character no better—but perhaps no worse—than the majority of men educated as he had been. He could make a hard bargain, and it would be your own fault if you afterwards discovered that you had had the worst of it. The word “cheat” he did not exactly understand; he never tried to pass off base metal as gold, or paste as a diamond; but he would just as readily have charged twenty guilders as five for anything he had to sell you—nay, he would still more willingly have asked a hundred if he imagined he could get it.

The dealer's brow was full of thought, and he sat for some moments looking at his wife and child without speaking. At length he suddenly burst out, “You say, vife, that the old lady is vorse?”

We may here remark that in general conversation with his wife, Moses spoke English, upon which, as we have said, he greatly prided himself; but when he wanted more particularly to impress her, he usually returned to the language she was most familiar with—Dutch.

“Do you hear, vife?” for the lady was musing as usual, and hardly understood his question until it was repeated.

“Much vorse,” his better half, with a sigh, answered.

“And you think she can't last long?”

“If she lives through the day, it is as much as she vill,” was the reply.

* * * * *

“Spyk,” cried the clockmaker. “Oh, you are there, are you?”

Poor Spyk's *there* was the end of a low form at the further part of the shop. He could see into the sitting-room, but could only hear a word that was spoken now and then. His look, however, was ever fixed in one direction—watching every movement of the mother and child. He started when his name was called; and, rubbing his eyes, turned their poor weak gaze upon his master.

“Shut up the shop, and then come to me.”

It was rather earlier than the usual hour for closing, and Spyk looked surprised, but he knew better than to make any remark in answer.

“You say you left the old lady asleep, vife.”

“She vas either asleep or passing away.”

“You don't think she vill miss your absence? You don't think she vill be getting up and *doing anything*?”

The good wife looked at her husband with as much astonishment as she could well depict on her expressionless face.

"I mean she vill not be getting at any of her boxes?" the husband explained testily.

"No, no, I have her keys, and nurse is vatching her."

Spyk came into the parlour after closing the shop, and stood looking first at the stove and then at Adele, who now sat on the stool at her mother's feet.

"Come and warm yourself, Spyk—there—sit on the floor," the girl said, and she drew him before the fire.

The poor drudge curled his long legs somehow into a circle, and sat on them.

"You must be quick about it then," the master said, "for I want to send you out."

Spyk looked timidly at the clockmaker and then at his daughter, and rubbing his hands a great deal, slowly rose to his feet again, saying, "I'm ready, sir."

"Go to the lodgings of Rebecca Floyden and see how she is. You understand?" This he said in Dutch. "If she is worse come back at once to tell us; but if she is about the same, say none of us will be there to-night, but the nurse may expect us the first thing in the morning. Do you understand?"

Spyk nodded his head, and putting a coarse worsted handkerchief over his mouth, and a flat cap on his head, hurried away to the other end of the town.

Whilst Doornspyk was away on his mission, his master remained for some time looking thoughtfully at the stove before which he was seated, then furtively turned his gaze on his wife. It was evident that he had something on his mind, and that he felt some difficulty in deciding how he should tell her his thoughts.

"I have been thinking a good deal, vife, about the poor life ve live here," he at last commenced. "The few friends ve have—the few pleasures ve enjoy" (here he rolled out his words slowly and distinctly)—"and the little money ve make."

The good wife opened her eyes even wider than she had done before, and said in a whisper, "But ve are happy."

"We are happy because we don't disagree," he continued hurriedly, in Dutch, for he thought perhaps it was better to speak, on a matter of such moment, in the language his wife knew best. "I am not happy, because I am not contented. You know when my mother died she left a sum of money to be invested in improving my business. That money I have not yet touched. You know when I married, you added a very nice sum to what I had already managed to save, and now, if your sister Rebecca dies, we shall succeed to her property. These sums together amount to about twenty-four thousand guilders, nearly two thousand pounds English money."

"Upon which we can live very comfortably, even if the business is not good," his wife rejoined.

"But I tell you I am not contented to grovel on—looking at every guilder as if our lives depended upon it, when a fortune might easily be made if we had a little more enterprise. Would you not like, wife, to ride in your carriage?"

The little woman looked at her husband in astonishment, and he had to repeat his inquiry a second time before she could answer him.

"Why do you ask so silly a question? You know every woman would."

"Then listen to me," and he drew his chair nearer to that upon which his wife was sitting. "My mother taught me English, but she taught me something more: she convinced me that a fortune was not to be made in this poor country—that if I wanted to be rich, I must look to her native land, where money is gained so readily."

"What could you do there, husband?" his wife asked, exhibiting for the moment so much alarm that Moses forgot himself, and replied angrily, "Leave that to me, leave that to me," but instantly checking himself, continued, "You have no occasion to fear—I am too wide awake to run any risk of losing the little we have."

"But you would not steal away from the dear old place in which we have passed so many happy days?" and a tear stood in the good wife's eye.

Le Mo looked on in wonder: he had never seen his helpmate so affected before, and seldom listened to so long a speech from her lips.

"Come, come, I do not wish to do anything without your consent, for although you know my judgment is better than yours, and that I am master, still as I shall have to use your money I will take you fully into my confidence. Now listen attentively. Nothing is to be made here by clock repairing, and very little even if I should give it up and become wholly a Dentist. But in England—in London, I feel convinced, with the capital I shall have at my command, a fortune is waiting for me. I have only to carry out the scheme I have matured, and riches—riches, wife, are ours."

The good wife's pretty face was turned more calmly towards her husband now, and her confidence in his wonderful cleverness beginning to reassure her, she listened meekly to what he had to say.

"You think that I have been living lazily—"

"You are never lazy."

"Well—that I have been plodding on, satisfied to continue as I have commenced. It is not so. I have for more than a month been in correspondence with a friend I have in London, and I now tell you that if anything occurs to your sister—although I don't want

you to think I wish her dead, poor soul,—we bid adieu to Rotterdam—we leave here for England—we leave at once.”

“But what will you do with Adele—what will you do with poor Spyk?”

“Take them with us to be sure. Again give me your closest attention. I propose to go to London and see the gentleman with whom I have been in correspondence; to take a house and get all snug and comfortable, then to come over and bring you to our new home. Come here, wife.”

The little woman got up, and stood by her husband’s side. He put his arm round her waist, and kissing her rosy lips, said, with more warmth and affection than he was accustomed to display, “You know, wife, I am doing it all for you. When your sister is dead you will have no relation left in the world, nor have I. Would you not like the change? And only think, my little fatty, how you would look rolling through London in your carriage. Come, kiss me, and say you will leave all to me.”

She did as her husband told her; and was about to tell him how fully she confided in his judgment, when the shop-door flew suddenly open, and Spyk, pale and breathless, stood before them. He looked terror-stricken, and for a moment did not appear to be able to articulate a word.

“What ails the boy,” Moses cried, “speak out, have you seen a ghost?”

“I went—I saw—Madame Floyden.”

“Well, well, speak out, you fool!”

“She is—dead—dead!” and he sank on to his wooden seat, trembling violently.

A smile passed over the master’s face, but he turned away to conceal it.

The good wife buried her face in her hands.

The door communicating with the sitting-room was silently opened, and the pale face of Adele looked through the opening. Spyk alone saw her, but in a moment she had vanished again; he heard a stifled sob, and knew that at least this poor child grieved for the relation just passed away.

“What can I do, what can I do?” he muttered to himself. Still in his weak brain an idea of protection and help seemed vaguely to flit before him—a duty so undefined that his intellect could not grasp it, but he felt—as he had felt in his dreams—that he had a secret trust to fulfil, and that nothing should make him betray it.

(To be continued.)

Dental News.

ANNUAL DINNER OF THE GLASGOW SOCIETY OF LICENTIATES IN DENTAL SURGERY.

THIS pleasant event in the session came off on the evening of Friday 11th Nov., when a large number of the members and their friends met in the Bath Hotel, Bath Street, Glasgow. The chair on this occasion was ably filled by James Cumming, Esq. the position of croupier being occupied by John Foulds Esq.

In the course of the evening the Chairman, in proposing the toast "Prosperity to Anderson's College," set forth the benefits which the managers of Anderson's College had showered on the profession in enabling them to establish a Dental School under such favorable conditions, and also the great advantages offered to students, who within the walls of Anderson's College could find every class required by the curriculum, the only thing they had to go forth for being attendance at a general hospital. Even a Dental Hospital had been instituted within the building, and he believed that nowhere else could a student find such convenience for study, much valuable time being often lost in running from place to place.

Professor A. M. BUCHANAN, Dean of the Faculty, in reply, said that Anderson's College had never been so prosperous as now, and it was with great pleasure that he was able to state that the connection of the Dental profession with the College had marked a decided increase in the students. He as a teacher had never had a harder working or more attentive class than that which was composed chiefly of Dental students and it was a source of considerable gratification for him to know that all of the students who joined his class three years ago had now succeeded in satisfying the examiners, and were entitled to write themselves L.D.S.

Mr. MELVILLE, in proposing "Success to the Dental Students' Society," said that it might not be amiss to make a few remarks on the condition of our profession when he entered it, nearly half a century since, and to compare it with things as they are to-day. He also wished to remind the students of the many advantages they now enjoyed for training them in the higher walks of their profession, which were denied to their predecessors of fifty years ago. In the olden time the

Dentist's apprentice had to be a lad of physique, of brains, and one whose fingers were not all thumbs. He had to learn to make every tool he required for himself, and that out of the rawest material. See him working away at a huge walrus tusk with a blunt saw, cutting the ivory into appropriate pieces for the different cases, and trembling lest he should be pulled up for cutting to waste; thereafter toiling for many hours with gouge, scalpel, and colour-pot, gradually fitting the bone to the model, then rasping and filing into shape, then carving the teeth, or cutting recesses into which to fit human teeth, which were usually fixed with gold screws. They had to manufacture springs, swivels, wire, plate, modelling trays, &c., for then there were no great Dental manufacturing firms, the few then existing firms supplying little else than ivory and human teeth. Nowadays the Dental student must have secured the education of a gentleman to enable him to pass his preliminary examination. He had his classes at college, his Dental hospitals, his societies; and in the mechanical department what a change! Everything supplied—tools of every conceivable form and degree of usefulness, mineral instead of human teeth, wax and vulcanite instead of bone, plate and wire in every size, gas furnaces which could be put into the crown of a hat, capable of melting many ounces of gold in a few minutes, and all the many alterations and improvements the outcome of half a century of experience. Then, there was no Dental literature, no Dental schools, no Dental societies, no communion of thought or interchange of ideas, in consequence of which jealousy and self-conceit predominated, and each Dentist hated the other with a good old-fashioned hatred. Now they had their journals, their societies of practitioners, of students, their schools, hospitals, &c., and were no longer a vagrant disorganised army each fighting for his own hand, but a united body, striving to elevate the profession to its proper position. It was highly gratifying to a veteran to know that the rising generation of Dentists were taking their part in the good fight, for it was by the institution of such bodies as the Dental Students' Society of Glasgow that the *esprit* of the profession would be kept up in future years. He begged to couple the toast with the name of the President, W. S. Woodburn, Esq.

MR. WOODBURN, in reply, after expressing his thanks for the kind way in which the toast of the Dental Students' Society had been proposed and responded to, said that he was much pleased to be able to state that as regards funds and members the Society was in a flourishing condition, that they had formed the nucleus of a library, and that the members

were constantly on the look-out for interesting specimens, a goodly collection of which had already been got together.

The toast of the "Dental Lecturers" was proposed by the Croupier, who expressed his high appreciation of the zeal with which every one who lectured to Dental students on subjects required by the curriculum had fulfilled his arduous duties, specially mentioning the President of the Society, J. R. Brownlie, Esq., to whose indefatigable efforts Dentists in a great measure owed their present position in regard to Dental lecturers in Glasgow, and with whose name he begged to couple the toast.

Mr. BROWNLIE, in reply, returned thanks on behalf of the Dental Lecturers and said that it was fitting that all the professors and lecturers, should be included in such a toast, seeing that in every instance they had so frankly and generously responded to the wishes of the Dental students by forming classes specially for them. It might be too much to expect that the splendid start made by the school should be maintained throughout, but he ventured to say on behalf of his colleagues that they had a strong sympathy with big classes, and if the gentlemen present, whose sons were growing up to relieve them of the toil and worry attending the daily work of the Dentist, would only send them in to fill up the ranks, the teachers on their part would undertake to do their best for them, that they might not only pass a good examination, but that they might carry with them into their daily work a well-stored mind, a well-drilled pair of hands, and an enthusiastic love of their profession. In all undertakings dependant for success on something in addition to one's own efforts a sense of anxiety must ever rest with those taking an active part in promoting such a work. In reading the proud boast made on behalf of a sister school, that its fame had reached even to India, one could hardly help feeling interested in so vigorous an infancy. They had no knowledge then that they too were known in that far-distant land, but he had now the pleasure of informing them that their fame had not only travelled as far, but that within the last two days, a student had come all the way from India to be enrolled amongst them.

Other toasts, including "The L.D.S. Society" "The Dental Hospital," and "The Chairman," having been duly proposed and honoured, the party separated after having spent a most enjoyable evening.

The proceedings were enlivened by several songs, and a reading by the President was much appreciated.

PARSONS, JOSEPH, has been appointed Honorary Dental Surgeon to the Halifax Infirmary, Yorkshire.

Correspondence.

[We do not hold ourselves responsible for the opinions expressed by our Correspondents.]

THE ENDOWMENT OF RESEARCH IN DENTISTRY.

To the Editor of the 'British Journal of Dental Science.'

SIR,—I did not reply to Mr. Fletcher's criticisms of my paper proposing to endow research in filling materials, not expecting him to view the matter from a scientific or professional point of view. It was in that light I wished to treat the subject, and I regret I have been generally misunderstood. I never said it would "pay" to investigate the subject, nor made any reference to "profit." It was no part of my proposal for a Dental Committee to give testimonials to preparations, the composition of which was not known to the profession. Neither did I hope to stimulate Dentists to make the research. I stated in my paper that I knew in the chemical societies there were a large body of gentlemen devoting the principal part of their time to chemical research, not for profit, and wanting in nothing so much as an indication of a direction in which they might experiment with some hope of being useful.

The Odonto-Chirurgical Society decide that endowment of research is useful only in exceptional circumstances and that these circumstances do not at present exist in the Dental profession. I assert the conditions are very exceptional in which the profession is placed as regards fillings.

We have the rising generation showing the most marked by increased destruction of the teeth. The only satisfactory remedy we have to offer is one within the reach only of the few—gold fillings, a remedy, the successful application of which demands so much interest in the work, skill and patience, and often sacrifice of health, that it is really astonishing so many gentlemen are capable out of the number who have had the opportunity of becoming so. It may not be an "exceptional circumstance" for a profession to be unable to supply a remedy of universal application for a disease of universal extent, but it is of vast importance to suffering humanity that such a remedy be found.

You refer, sir, to some success gained by the British Medical Association from endowing research in a few particular problems. Were the conditions there so exceptional?

Is it because the conditions are so exceptional in the

scientific world Government is satisfied to continue the grant of £5000 per annum?

Dr. Lyon Playfair, speaking at the Westminster Industrial Exhibition, asserted that the most valuable inventions were made by men out of their own occupations, and gave numerous illustrations. He attributed the success gained in these instances from the investigators attacking their subject undeterred by the knowledge of the previous failures. The arduous nature of the services rendered to the public by the Dentist in return for a guinea fee in comparison with the physician leaves the former after a day's work with little inclination or energy for scientific work, as against the latter, unless he is an enthusiast.

From reading the editorial paragraphs I should like to see the scope of my proposal enlarged; and a bold bid made to the medical and chemical world to solve for us the two most important and pressing problems in Dentistry—the cause of caries and a plastic filling. The profession could well afford to do this. It cannot plead it has already spent a penny in encouraging research. The more handsome the prize offered the greater would be considered the honour of gaining it, and probably the better result attained. It would never be intended or expected to be “pay” or “profit,” and would certainly fail in its object if it were. I am, &c.,

WALTER WHITEHOUSE.

50, Parliament Street, S.W.

DENTAL REFORMS IN FRANCE.

To the Editor of the 'British Journal of Dental Science.'

SIR,—I am glad to be able to announce that the scheme for the establishment of a gratuitous Dental service in all the primary municipal school of Paris was finally agreed to on the 28th of November last. We shall, therefore, pass without delay from theory to practice, the definite institution of the service being delayed only by matters of detail, such as the election of the staff from the candidates, &c. But, besides the *municipal* schools, which number about two hundred, there are two hundred other *primary* schools not municipal, some Catholic, under the control of the archbishop, some Protestant, and a few Jewish; all, however, are *free* primary schools. The considerable improvements thus recently introduced by our municipal representatives into the communal schools of necessity stimulated (as I was well aware it would do) the zeal of the directing committees of the other free schools, who could not well allow their pupils to enjoy fewer advantages. Thus, the creation of an institution

analogous to that decided upon by the Municipal Council of Paris is about to be discussed by all the directing committees of the free schools of our capital, Papist and Evangelical. I have had several conferences with members of these committees of all sects, and they have informed me of their intentions on this point.

Now, sir, if you would like to have an idea of the strength of public opinion with regard to my dream of seeing the measure in which I have taken the initiative adopted amongst all civilised nations and in every town where the residence of a sufficient number of Dentists would allow it, you have but to glance through the November number of the 'Cincinnati Dental News,' the 'Missouri Dental Journal' for December, the 'Revista Odontologica' of Madrid for November and December, and many other Dental and medical reviews published in Europe and America, the names of which have escaped me. My idea is received as favorably by them as by the 'British Journal of Dental Science,' and seeing the enthusiasm with which my scheme has been everywhere received, I hope that the practical example furnished by the whole of Paris will make my *confrères* regard it as a point of honour to attain the same result at home. The Dental profession at Cincinnati, at Madrid, and at Berlin, if my correspondents are not mistaken, fired with emulation do not mean to remain behind.

About two months ago it struck me that my idea was quite as applicable to London as to Paris. I therefore wrote to the Lord Mayor and added a copy of the petition I have already sent you. But so great a personage evidently could not answer the letter of a simple French citizen who had not even been presented to him, and I know too well the importance attached to etiquette in governmental circles to have been chagrined by the silence of milord.

But now that my scheme is accepted by the City of Paris, if your Dental Association should happen to think it advisable to send the Lord Mayor an analogous petition it might perhaps be useful to it to know that he, or at any rate the functionary who opens his letters, has already had the subject brought under his notice. I am, &c.,

E. TAILLEBOIS.

Paris; Dec. 21st, 1881.

THE EXPANSION REGULATION PLATE.

To the Editor of the 'British Journal of Dental Science.'

SIR.—My attention has just been called to a paper on "Generalised Treatment of Irregularities" by Mr. W. H. Coffin, which was read by that gentleman at the Inter-

national Medical Congress, and which appeared in your Journal of October of this year. I must confess I was simply stupefied to find that the author of the paper claims the invention of the expansion plate for his father, and all through the paper and subsequent discussion the plate is spoken of as "Dr. Coffin's expansion plate." Now, I simply wish to state that the invention in its entirety is wholly and absolutely mine, which I can abundantly prove, and in common justice it should be known, both now and hereafter, not as Dr. Coffin's, but as Peter Headridge's expansion plate. Moreover, I claim the application of steel wire to every kind of regulating.

Yours, &c.,

PETER HEADRIDGE.

1, Lime Grove, Oxford Road, Manchester;
Dec. 21, 1881.

To the Editor of the 'British Journal of Dental Science.'

SIR,—Hearing certain statements made by a former pupil and assistant of my father's, I enclose copies of a recent correspondence with him.

Yours truly,

WALTER H. COFFIN, F.C.S., F.L.S.

1, LIME GROVE, OXFORD ROAD, MANCHESTER;
Nov. 28th, 1881.

DEAR SIR,—I have read in both the 'Dental Record' and the 'American Cosmos' your paper on "Irregularities." You there wish to convey the idea that your father was the inventor of the Sectional expansion plate, with steel springs.

I write to ask if he holds this to be true, or if he claims to have anything connected with the originating of the said plate.

Your early reply will oblige.

I remain, dear Sir,

Yours truly,

PETER HEADRIDGE.

W. H. COFFIN, Esq.

94, CORNWALL GARDENS, LONDON, S.W.;
December 10th, 1881.

DEAR HEADRIDGE,—I am very glad to have heard from you, and that you have seen my "paper," which, by the way, I do not think has appeared in the 'Cosmos.' I send you a reprint of it. I am sorry you did not come up to the Congress and see my models and plates, which, I think, would have interested you, and you could have helped the discussion with your experience. I have since been inundated with correspondence, which I am working through in order, and must therefore beg your indulgence for apparently neglecting your letter. I regret you had to write again. As to your questions, of course the idea of sectional plates, wholly or partially divided, and actuated by springs or otherwise, is very old, and I am not aware that my father claims one or the other.

As long ago as 1830, two independent blocks of ivory, connected by a stiff band of springy gold, was employed, and described as "for straightening the jaw teeth," and one was knocking about and to be

seen in a London laboratory till a few years ago. Early French writers speak of similar things, and a German professor of Dentistry informs me that the mutual reaction of a newly-split old-fashioned metallic regulating plate he has known to have been used in Germany twenty-five years ago. In America, in 1859, Dr. Westcott forced apart two opposite halves of a silver wire bent just as you make your single curved steel springs. In 1860 Dr. White used a gold spiral spring between hinged halves, and since then innumerable men have variously operated springy, hooked, or entirely separated plates; and an eminent English practitioner of London employed divided plates of silver with thick gold wire springs twenty-five years ago. I believe the use of steel wire (tempered) for purely expansive purposes was suggested by yourself after 1866, as supplementary to the variously split vulcanite plates my father had previously employed for general regulating purposes. Into the history of the matter I could not enter in my little Congress "paper," limited to fifteen minutes reading; and though many men have contributed to the subject, and given me invaluable ideas and assistance, I mention no name but yours as having perhaps worked as much and as satisfactorily as any other in this direction. Our present system of treating irregularities by a generalised method is the result of the slow elaboration of details by careful and plentiful experience since then, one essential of which, the expansive principle in plates, I am surprised to find less known to the profession than from your labours and my father's I had supposed it to be. Of this system (1) our method of taking impressions, (2) preparing the models, (3) the manner of bending the springs, (4) its shape, (5) its method of attachment to the plates, (6) its chemical protection, (7) the use of non-tempered pianoforte wire, (8) its non-tensional initial form and use, (9) means of unsymmetrical expansion, (10) the function of permissive expansion in general regulating, and (11) its control, I believe and know, are entirely and solely original with us. Above all, while enjoying, personally, considerable professional advantages and reputation in the knowledge, experience, and almost exclusive practice of this method, I have taken upon myself the labour of making it known as fully and openly as possible to the profession.

I hope shortly to publish more completely its history and bibliography, and shall be glad to receive from you any particulars of your own share in this work, and as my only object is to get at a full, fair, and accurate account I can assure you that to the extent of my information your claim shall have at my hands full and unreserved acknowledgment.

Yours very truly,

WALTER H. COFFIN.

To PETER HEADRIDGE, Esq., Manchester.

ANOMALOUS EFFECTS OF NITROUS OXIDE GAS.

To the Editor of the 'British Journal of Dental Science.'

SIR,—In your last issue the following paragraph appears in connection with the above subject, p. 1207. "For some years at first I used to get the nitrous oxide gas made by Messrs. Coxeter, but now I get it direct from Messrs. G. Barth and Co. Whether this has anything to do with the now almost entire absence of disagreeable symptoms I am

not prepared to say." We have never to our knowledge had any direct dealings with Mr. Ritson, nor is there any *direct* imputation against the quality of our nitrous oxide, and we therefore leave your readers to judge, in the spirit of fairness and generosity, whether such a damaging assumption is deserved. There would of course be no difficulty in our naming many gentlemen who have been large consumers of our liquid nitrous oxide from the time we had the honour of introducing it commercially to the world in 1870 until the present time; but we are content to believe that other causes have contributed to the more favorable anæsthesia, possibly more efficient inhalation apparatus, patients more familiar with the effects, and the anæsthesia itself better administered, &c. May we trespass for a moment longer to refer to the interesting subject of Mr. Coleman's paper at the last meeting of the Odontological Society, his kind invitation to which we were suddenly prevented from attending. The subject is having our careful consideration from a manufacturer's point of view, but it must be remembered that in the cost of production "material" is the lowest item, the chief expense being in compressing or liquefying after the gas is made. Apologising for taking so much of your valuable space,

We are, &c.

JAMES COXETER & SON.

ANSWERS TO CORRESPONDENTS.

A. HUME.—We thoroughly agree with your views, but do not think it advisable to publish your letter, even if we had space for it. We hope the matter will now be allowed to defervesce.

"STUDENT."—Apply to the Registrar of the Medical Council.

Communications have been received from Messrs. Andrieu (Paris), Marshall Webb (Lancaster, U.S.A.), Adolph Witzel (Essen, Germany), Edwin Saunders (London), Simms (Manchester), Whitehouse (London), Blandy (Nottingham), Peter Headridge (Manchester), E. Taillebois (Paris), Coxeter and Son (London), W. H. Coffin (London), "A Dentist" (Manchester), W. Lang (Glasgow), E. R. Learoyd (Sheffield), E. H. Bowne (New Jersey), J. Parsons (Halifax).

BOOKS AND PAPERS RECEIVED.

'Lancet.' 'British Medical Journal.' 'Medical Times and Gazette.' 'Pharmaceutical Journal.' 'Chemist and Druggist.' 'Journal of the British Dental Association.' 'Missouri Dental Journal.' 'L'Odontologie.' 'Giornal di Correspondenza dei Dentisti.' 'Ohio State Journal of Dental Science.' 'Ueber exarticulation des Unterkiefers zur Entbfernung von Tumoren,' von Alfred Sternfeld. 'Twentieth Annual Report of the Dental Dispensary, Plymouth.' 'A Generalized Treatment of Irregularities,' by Walter H. Coffin. 'On Alveolar Contraction,' by Dr. C. R. Coffin. 'Dental Cosmos.' 'Recherches sur les gencives et leurs maladies,' par Dr. Magitôt. 'Transactions of the Odonto-Chirurgical Society.' 'Dental Record.' 'American Journal of Dental Science.' 'El Progreso Dental.'

British Journal of Dental Science.

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ON THE MORE IMPORTANT METALS USED IN DENTISTRY.*

By WILLIAM H. FOULDS, L.D.S.

MR. PRESIDENT AND GENTLEMEN,—The subjects which I shall endeavour to deal with to-night are of considerable importance to us as Dentists, and although most of the facts which I shall bring before your notice are already known to many of the gentlemen present, I feel confident that the repetition of them can do no harm and may probably be the means of imparting knowledge.

In dealing with the six metals which are to form the subject of this paper, I do not intend to go into the minute metallurgy of them, nor to consider the different processes for their reduction from their ores, but intend only to speak of them in relation to their province in Dentistry, and under the conditions in which they are brought into the Dentist's laboratory.

In any treatise on metallurgy it is usual to speak of the noble metals first, and I will therefore give the first place to that comparatively rare and much valued metal—gold.

Gold, owing to its extreme malleability, ductility, tenacity, and non-liability to oxidation on being acted upon by any simple acid, makes it one of the most useful metals used in Dentistry, its bright yellow colour being its only fault. One characteristic of pure gold is its great softness, and while that is as it were a grave fault when looked at from a

* Read before the Dental Students' Association of Glasgow on Dec. 21st, 1881.

merely mechanical point of view, taken from an operative standpoint it becomes one of its greatest advantages. As a permanent filling it has no equal, and its easy adaptability to all forms of cavities may be traced to its softness and to the fact that it welds without heat when entirely free from impurities or moisture. Gold may be used in a variety of different forms, the aim of those different forms being easy introduction, thus saving time to both operator and patient, and lessening the risk of damage by moisture. Its principal fault as a filling is its colour, which being bright is easily noticed.

As a base for artificial teeth pure gold is never used on account of its softness, but when alloyed in proper proportions it undoubtedly makes the best base which has been brought forward. Gold plate should never be used of less fineness than sixteen carats. When any less standard is used it is acted upon injuriously by the acids of the mouth, and becomes much discoloured.

Mr. Fletcher, of Warrington, speaking of the reduction of gold to a required standard, says: "It is much safer always to take coins, as the fact that the coin has been rolled from the ingot, and stood the blow from the dies, is always a proof that the metal can be trusted not to produce a brittle ingot. Many samples of gold almost chemically pure are quite unworkable." In adding alloy to a sovereign it is well to remember that English gold coinage is alloyed with copper only, and that every sovereign contains $10\frac{1}{4}$ grs. copper and 113 grs. pure gold, therefore in reducing to a given standard you have to take into consideration the copper already present. To reduce pure gold to eighteen carat I find that eighteen parts gold, four parts copper, and two parts silver, make a very good plate, having a rich colour, and being strong and tenacious without being springy. In the manufacture of bands, springs &c., &c., by the addition of a little more copper, a hard springy gold may be made. Formula—

Gold	=	18 parts.
Silver	=	2 „
Copper	=	6 „

Alloys of gold used for soldering should be as near the

standard of the plate used as possible, and in fact some Dentists only add one part of zinc in twelve of gold to make gold solder, the benefit of the zinc being to make gold melt at a lower temperature and flow easily. Some use brass in their solders instead of zinc. I find that the gold solder I use flows very easily and is of good colour; its composition is—

18-carat gold	=	18 parts.
Silver	=	4 „
Brass	=	2 „

When gold is used as one of the constituent parts in the manufacture of amalgams for filling carious teeth, it causes the amalgam to take longer to set, but makes it cleaner to work and less liable to discoloration.

Gold plating is becoming quite a common process in Dentists' laboratories, and the fine gold surface which is deposited upon platinum alloy and silver must tend, as long as the coating lasts, to protect the metal from the action of the acid secretions. However, gold plating being only slightly connected with Dentistry it is scarcely necessary to do more than mention it.

Before leaving gold I would like to say a few words concerning the warping of plates. My ideas on that subject are that warping of gold plates is usually caused in two different ways:—1st. By bands being badly fitted to a plate. For instance, if a space exists between a plate and a band, that space is usually filled up with small pieces of gold and solder, the difference of contraction between the plate and the solder in cooling would cause warping. 2nd. From the unequal expansion of the plate and the material in which it is embedded while heated up for soldering. However, of the two causes, I believe the first to be the most prevalent, as I have found from experience that where bands are closely fitted to a plate warping is seldom found.

Silver is of a whitish colour, very malleable, ductile, tenacious, and capable of acquiring a splendid polish. On account of those very important qualifications it is one of the principal metals used for the manufacture of articles of *vertu*,

but on account of several grave faults it is of only limited value to the Dentist.

Its chief value in Dentistry lies in its being one of the principal constituents of amalgams, and its greatest fault when used in that way is its liability to discoloration.

Unless for a temporary regulation plate, silver should never be used as a base for artificial teeth for two good and sufficient reasons:—1st. Because it is not durable, being acted upon and dissolved by the acid secretions of the mouth. 2nd. Because sulphuretted hydrogen causes it to become discoloured and very conspicuous. Vulcanite will not harden upon nor adhere to the surface of silver, therefore when a combination plate is desired of that metal and vulcanite, the plate requires to be platinized or gilt.

When melting silver in a crucible it should always be entirely covered with borax or some other flux, as it absorbs oxygen from the atmosphere in its molten state, and upon cooling that oxygen is given off, causing blows and pits upon the surface of the ingot.

It is when alloyed with platinum, to form what is known in the profession as dental alloy, that silver becomes of value.

Dental alloy has now become a recognised base for artificial teeth, and when its qualities, as compared to silver, are taken into consideration, it will be found to be vastly superior to that metal. It is of a bluish-white colour, malleable, tenacious, &c., and melting at a very high temperature. Unlike silver, the oral secretions have little or no effect upon it, and when platinum is present in sufficient quantity it does not become discoloured. It is as easily worked as gold or silver, and in my opinion makes an exceedingly good base.

In melting dental alloy, which I have frequently done in Fletcher's injector furnace, the greatest difficulty I had to contend with was the tendency of the heavier metal to go to the bottom of the crucible, and thus cause an ingot which was not uniform throughout. To neutralise this tendency I usually raise the heat as high as possible and stir immediately before pouring, but even with the greatest care I often

require to melt the alloy two or three times before getting a satisfactory result; however, with Mr. Fletcher's excellent little furnace this is very little trouble, and the time taken to remelt it is very short. To produce a surface of platinum upon dental alloy the plate only requires to be boiled in sulphuric acid, when the silver, being dissolved by the acid, leaves pure platinum upon the surface.

Platinum is of greyish-white colour, malleable, tenacious, ductile, &c., and has the greatest density of any known metal. None of the simple acids have any effect upon it; it is soluble in nitro-muriatic acid only. It will withstand the fiercest heat of a furnace without melting sufficiently to be poured into an ingot, and can only be melted thoroughly by the oxyhydrogen blowpipe in a furnace formed from blocks of lime; electricity has also the power of fusing it. It is unchangeable in air, and even when subjected to a white heat its polish is not impaired.

Platinum gives to amalgams the property of setting quickly. Mr. Fletcher declares that platinum is the only metal which gives an amalgam this power of rapid setting, and at the same time of retaining its original shape after hardening. Amalgams which contain platinum are very dirty to work with. Platinum foil, covered with a thin coating of cohesive gold, has been tried as a permanent filling, but, owing to the peculiar harshness of the metal, it was found to be almost impossible to get a water-tight plug. The only advantage such a filling could have over one of gold would be that of colour, even could it be as easily adapted and remain as permanent as a gold plug.

It is in the mechanical branch of our profession that the great value of platinum is seen. In the manufacture of artificial teeth it has been found that no metal but platinum will withstand the intense heat necessary in firing them, and the fact of platinum withstanding that heat without discoloration makes it still more valuable; did heat discolour it the body of the tooth would be discoloured also by contact with the little pins inserted into it, in which case it would be worthless. Looking at it from this point alone, any one who knows what a great variety of pin teeth there are, can

easily estimate the value of platinum to the Dentist in this branch alone.

In the manufacture of continuous gum work it is indispensable, as without it we could find no metal which would act as a base and withstand the heat necessary for this kind of work.

When platinum is used in continuous gum work it requires to be soldered with pure gold; should any alloy be present it would cause discoloration of the body of the piece during firing. A small percentage of platinum added to gold gives it a bad colour, but makes it hard and elastic; it is, therefore, sometimes used in the manufacture of springs, clasps, &c., as an alloy.

Vulcanite hardens upon and adheres firmly to platinum, and a gauze made of that metal is frequently used as a strengthener in vulcanite work.

Zinc is a bluish-white metal, having a considerable amount of malleability under certain circumstances; when broken across it displays a very brilliant lustrous appearance. In dry air it retains its polish, but when brought into contact with moisture it assumes a dull grey appearance. Under ordinary circumstances zinc is a brittle metal, but when subjected to a heat between 230° and 290° F., and rolled into sheets at that temperature it retains its malleability when cold. The zinc of commerce is usually impure, containing, as a rule, traces of iron, lead and arsenic. Zinc, melts at 773° F., and when heated much above that point burns with a bright greenish-white flame, giving off at the same time dense white fumes and little specks of oxide of zinc. After being heated frequently it becomes very thick and unworkable. To bring the metal to its usual condition, after heating to a dull red, pour a small quantity of muriatic acid upon it, at the same time stirring the molten metal briskly. A heavy dross will be seen to rise to the surface, which can be easily removed. Half an ounce of the acid poured on while the metal is being stirred is quite sufficient to clean four or five pounds. To remove any lead which may accidentally become mixed with zinc, melt the metal in a ladle and pour into a deep mould; the lead being

of the greatest specific gravity will fall to the bottom ; it can then be easily removed with a hammer and chisel. The lead, from its softness and from the absence of the facets found in zinc, can be easily distinguished.

As a filling material in operative Dentistry oxide of zinc is now pretty largely used ; the manufacture of that material is conducted in a number of ways, and is strictly a chemist's work, and as a chemically pure article is necessary as a stopping material very few Dentists I believe trouble themselves to produce it. It is in the manufacture of dies for swaging metallic base plates that the value of zinc to the Dentist is seen, and experience has shown that of all the unalloyed metals it is certainly the most reliable for that purpose.

A metal which would be hard, would fuse at a comparatively low temperature, would not contract in cooling, and would have sufficient cohesive force to withstand the blows from the hammer in striking up, would be the best material a Dentist could desire for the manufacture of dies, but unfortunately no metal possesses all those good qualities, and, therefore, zinc, which combines them in the greatest degree, is looked upon at present as the best for all practical purposes.

Zinc dies should be annealed before and during the process of striking up to lessen their liability to fracture.

One point that ought to be noticed in casting dies of zinc is that when the metal is poured into the mould as near the melting point as possible, the die is less liable to crack than when the metal is poured at a higher temperature.

An alloy of two parts of zinc to one part of tin is sometimes used as die metal ; it is found to take a very sharp impression from the sand, and the shrinkage is undoubtedly greatly reduced, but the face of the die has not the same hardness that unalloyed zinc would have, and it is therefore more liable to be bruised or battered down, and the adaptation of the plate to the mouth must therefore be rendered faulty.

Lead is a heavy metal of a bluish-grey colour, exceedingly soft and malleable, but its ductility is not great ; it welds

without heat when the surfaces brought into contact are perfectly clean.

Its uses in Dentistry are only limited, yet for those purposes for which it is used it is exceedingly valuable. Lead in sheet has been frequently used as a filling material, and a filling of this description will sometimes last for several years.

In the mechanical branch of Dentistry lead is used principally in the formation of counter-dies, and when rolled out into thin sheets it is used for making patterns of plates, bands, &c.

As a metal for counter-dies lead answers all practical purposes; however, a metal that will melt at a lower temperature is sometimes desired, and we therefore fall back on one of its numerous alloys, lead alloys in all proportions with tin, two parts of tin to one part of lead, forming what is known as soft solder. The formulæ for type metal, which is sometimes used for counter-dies is

Lead	=	5 parts.
Antimony	=	1 part.

This melts at a much lower temperature than lead, the melting point of the latter metal being 617° Fahr., that of type metal being 500° Fahr.

Tin is a bright whitish metal, having a crystalline appearance; also being malleable and tenacious, it does not discolour readily, the atmosphere and moisture having little effect upon it. It is seldom found pure, containing, as a rule, traces of copper or arsenic, sometimes both. The purest form in commerce is grain tin.

Its greatest value to the Dentist is in its being one of the constituents of most amalgams, and for that purpose it is highly commended.

Tin	=	9 parts.
Silver	=	7 „
Gold	=	1 part.
Copper	=	1 „

make a pretty fair alloy for amalgams. In the manufacture of amalgams it is absolutely necessary that chemically pure

metals be used if you wish to arrive at a satisfactory result.

Tinfoil has been used for a long time as a permanent filling, and I have seen many plugs of this material that have stood to all appearance unchanged for a number of years; however, at the present time gold in its many forms has almost entirely superseded it, and the fact that it takes a long time to insert a tin plug will always be against its becoming popular as a cheap filling.

Tin combines in all proportions with lead, antimony, and bismuth, forming alloys which melt at a lower temperature than lead. In making fusible plugs for those vulcanisers which have no safety valve an alloy of

Tin	=	4 parts.
Lead	=	4 „
Bismuth	=	1 part,

will melt at 320° Fahr. As those fusible alloys are but little used I will say nothing further concerning them.

In the work-room tin is found to be valuable in two or three different ways, chief amongst them being in the manufacture of tin models on which to make celluloid work, and any one who has seen the difference between the work made on plaster models and work made on tin ones will be sure to be highly pleased with the result obtained from the use of metal. Another way in which it is of great value is in making moulds between which the soft rubber used for obturators in the treatment of cleft palate can be vulcanised, these tin models causing the surface of the artificial palate to be perfectly smooth when taken out of the flask.

Tin is sometimes used instead of lead or type metal in making counter-dies; it is also used in some minor ways in the laboratory, but I think I have mentioned the more important cases in which it is used, and in which it is of most value to us as Dentists.

ON SOME OF THE DISEASES OF THE ANTRUM AND THEIR TREATMENT.*

By J. M. ACKLAND.

(Concluded from page 12.)

IF the inflammation be simply *acute*, we may draw blood from the gums by means of free incisions or leeches, and bathe the face with warm narcotic fomentations, whilst, at the same time, it will be necessary to give the patient purgative and sedative medicines. A warm decoction of poppy heads or infusion of conium has frequently given great relief, and twenty or thirty minims of the sedative solution of opium in a small quantity of warm mucilage injected into the cavity, and detained for the purpose of absorption, has also been most successful in allaying severe pain.

Should, however, the active symptoms continue, and the cavity become distended with fluid, we must resort to the more severe measures adopted in *chronic* inflammation.

Suppuration of the lining membrane is sometimes associated with necrosis of some part of the upper jaw, generally the alveolar process. In such cases the pus has the foetor indicative of the presence of dead bone, unlike the mere putrid smell, when it is the result of suppuration alone. The plan generally adopted is to make a perforation in the neighbourhood of the dead bone, which will first of all allow of the free discharge of matter, and afterwards assist in the shedding of the sequestrum, as it is sometimes difficult to remove necrosed bone at once. When we get a *fetid* discharge chloride of lime and permanganate of potash are particularly serviceable.

Occasionally, the floor of the antrum—the teeth having been long removed—becomes extremely hard, dense, and compact, and it is difficult, and in some cases, almost impossible, to enter the cavity through its substance. We must

* Read before the Students' Society of the Dental Hospital of London.

then pierce its wall below the malar bone, having previously divided the mucous membrane down to the bone.

Another plan for opening the antrum was suggested by M. Jourdain in 1795, viz. that of the bent sound; and trials have since been made by Mr. Bell at Guy's Hospital, but with no definite result.

Inflammation and subsequent suppuration of the lining membrane may not necessarily be the result of diseased teeth. For instance, the late Dr. Rees records a case in the 'Medical Gazette' in which suppuration was induced in an infant, a fortnight old, as the result of pressure of the face upon the arch of the pubis during delivery.

Again, M. Gensoul mentions an instance of suppuration brought on by irregular dentition. It may also be produced by foreign bodies, by any obstruction in the normal opening, as well as by necrosis and syphilis. The diagnosis of the several forms of this disease is by no means easy, and eminent surgeons have fallen into the error of mistaking them for solid growths.

This is more especially likely to occur when, as is sometimes the case, considerable hypertrophy of the osseous wall has taken place in consequence of the irritation the bone has received. This thickening of the bone may remain permanently long after the cure of the abscess, and may necessitate a further operation. Thus, in a case under the care of Sir William Fergusson, published in the 'Lancet,' June, 1850, an osseous tumour of the size of a pigeon's egg was found projecting from the superior maxilla of a man, aged fifty, who had been the subject of abscess, and whose antrum was still distended though containing no fluid. This deformity was only got rid of by removing the anterior wall of the antrum with the tumour.

A somewhat different form of disease is that known as "Hydrops antri," or dropsy of the antrum. In it we get a gradual, though painless, dilatation of the upper jaw, until at length its outer wall becomes so extremely thin that fluctuation is readily perceptible, whilst, by the bulging of the internal wall, we may find the nostril more or less completely blocked, and the palate becoming flattened. Our treatment

in these cases would be very much the same as has previously been described for chronic inflammation.

Free access having been gained to the cavity, a quantity of clear or yellowish serous fluid is evacuated, which frequently contains flakes of cholesterine floating in it. After the fluid has ceased to flow the swelling gradually subsides, and the maxilla resumes its normal relations.

It must be borne in mind that the fluid escaping in these cases in no respect resembles ordinary mucus, whilst, on the other hand, it bears a remarkable resemblance to that found in well-marked cases of cystic disease. Indeed, it is certain that in some instances, at any rate, this affection originates in the growth of a cyst or cysts within the antrum, or in connection with the fangs of the teeth, which so increases in size as to be mistaken for the cavity itself when opened, or breaks into the antrum by absorption of the cyst wall, so that on subsequent examination no evidence of cystic formation remains.

According to M. Giraldés the glandular follicles of the mucous membrane become dilated and form these cysts, and he seems to be averse to the simple operation of tapping as useless, advocating the opening up of the antrum so as to get at the seat of the disease.

The treatment, however, of cystic disease of the antrum is generally simple, as in the majority of cases it is only necessary to incise the distended membrane and evacuate the fluid, the bony wall having been absorbed.

With the finger in the antrum the cyst can readily be examined, and the opening in the membranous wall sufficiently enlarged to allow of a free discharge of fluid. We should then use some stimulating lotion; and although the cure may be somewhat slow it is permanent.

Sometimes on probing these cases we find a tooth, or the root of one, which has passed into the antrum at the time of its attempted removal, but owing to the subdivisions in the floor of the cavity we may have considerable difficulty in ascertaining where the tooth really lies, and afterwards find it no easy operation to dislodge it. When such is the case it is necessary to resort to a curved scooping instrument

wherewith to entice it from its position. This possible condition should be borne in mind in cases of obstinate and prolonged inflammation.

We still have a form of cystic disease known as “dentigerous cysts,” which secondarily involve the cavity.

Morbid changes in the roots of teeth give rise to the formation of serous cysts, which in some cases acquire a very large size, equal even to that of the antrum. They may occur in either jaw, suppurate, and give rise to abscess, which may be confounded with suppuration within the antrum; or they may project into the cavity and more or less completely fill it. Dentigerous cysts arise in connection with teeth which from some cause have remained within the jaw, and have undergone a certain amount of irritation. As a rule, they are connected with the permanent, although there are cases on record in which they have arisen from the temporary teeth. But I must refrain from saying more on this particular disease, merely remarking that care should be taken not to mistake “dentigerous cysts” for solid tumours.

Among the growths which spring *directly* from the antrum may be mentioned polypus and fibrous disease of the antrum.

Polypus of the antrum is a somewhat rare affection, occurring only in five subjects out of sixty examined for the purpose. It exists more often in the nasal fossa, from whence it sometimes finds its way into the antrum by the absorption of its inner wall, or by merely pressing upon the inner side of the cavity diminishes its size. Polypi of the antrum, having a plentiful supply of blood, bleed very freely when interfered with. They are often the forerunners of malignant disease occurring in the antrum and jaw, but, as a general rule, their symptoms do not become developed until the growth is of sufficient size to encroach upon the neighbouring cavities, or produce distensions and absorption of the front of the antrum.

Fibroid disease of the antrum is exceedingly rare. It is a form of disease somewhat allied to polypus, and occurs in the lining membrane. It appears to consist of a fine, soft,

fibrous stroma, in which very numerous nuclear bodies and a few elongated fibre cells are distributed. Its structure resembles that of the upper strata of a mucous membrane, from which it is probably an outgrowth. It consists of newly-formed fibrous tissue, and of the elements from which fibrous tissue is developed, and may therefore be classed among the simple fibro-plastic growths as distinguished from the true myeloid tumours, which we will next briefly consider.

Myeloid disease occurs mostly before the age of twenty-five, and is found both in the upper and lower jaws. In myeloid tumours the bone is slowly developed, hence their diagnosis is by no means easy. Cysts occasionally form in these tumours, and if these be punctured they will be found to yield a fluid in which the characteristic myeloid cells may be discovered by the aid of the microscope.

M. Demarquay mentions a case in which hypertrophy of the glandular tissue of the mucous membrane produced tumours of a friable description, filling up both the antra. The patient had a large tumour on each side of the nose, the passages of which were completely obstructed, and the right eye protruded from the orbit. To extirpate these the front walls of the antra had to be removed.

There are other tumours affecting the antrum, but having briefly described the more important ones, it will be unnecessary for me to say more about them, merely adding that in the case of malignant tumours, unless surgical aid is sought at an early stage, death generally intervenes.

Before closing my paper, I trust I may be allowed to give a short account of a somewhat difficult and obstinate case of antral disease now under treatment in this hospital, the particulars of which have been kindly furnished by Mr. Claude Rogers.

“Annie W—, aged twenty-eight, was sent to the hospital some two years and a half ago by a practitioner, who in the attempted removal of a bicuspid root had allowed it to slip into the antrum, although at the time he was not quite certain where it had gone. The patient was in considerable pain, and had every symptom of abscess of the antrum.

“On examination the hole into the antrum was considered to be too small to allow of a root having entered. The patient was directed to use weak carbolic acid. This continued for about six months, when on probing something loose was felt, and eventually the root of a first bicuspid, about a quarter of an inch in length, was removed from the cavity.

“As the matter still accumulated, attended by slight pain, a piece of sea tangle was inserted to keep the orifice open. When next the patient attended, it was discovered that by some accident the sea tangle had become disconnected from the string to which it was attached, and been pushed into the antrum, thus complicating matters considerably.

“About a week after the patient was put under gas, and with a large Reimur (here shown) the size of the opening was increased. This enabled the sea tangle and one or two pieces of necrosed bone to be removed. During the time the case has been under treatment, various kinds of injections have been used, amongst them being carbolic acid, phosphoric acid, creosote and iodine, and iodine and eucalyptus, no injection giving continued satisfactory results, although the patient felt easier with carbolic than with any other.

“The cavity is now considerably reduced in size, but even so late as Tuesday last a small piece of sea tangle came away, showing that the antrum is not yet quite clear.”

Perhaps “sea tangle” is unknown to some of us. It is the section of the long tail-like sea-weed found on our shores which has been dried and shrunk under pressure, and if a suitable piece be inserted into an orifice, it will slowly, though forcibly, expand it when subjected to the influences of heat and moisture.

In conclusion, gentlemen, I beg to thank you for your patient attention to what I fear has been a dull paper, and whilst regretting my inability to deal with the subject as it deserves, I trust it may be the means of bringing before the meeting your various views on this interesting region.

British Journal of Dental Science.

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THE CURRICULUM.

EVERY compulsory curriculum of study is in itself a confession of human weakness, a standing testimony to the fact that the astutest of examiners is after all but a fallible creature, who needs to be protected from the artful wiles of the cunning candidate. It ought not, one would think, to be such a difficult matter for an examiner to decide in the course of a moderately prolonged conversation whether the trembling youth before him has acquired a competent amount of knowledge and skill. But the examiners, who it is to be presumed know more about their own examinational capacities than we or the outer public do, have decided otherwise, and their action in this respect is about as reasonable as if they had declared that they could not gauge the fluid contents of a donkey's stomach without the driver's certificate that the said donkey had been taken to the water. It is not for us to suggest that such artificial aids to diagnosis as the whole apparatus of schedules and Deans' signatures supplies, may possibly lessen the examiner's sense of responsibility, for of course every examiner is conscientious even if not infallible. But it will not perhaps be thought that we are going beyond our province if we express, on the behalf of present and future students, the hope that the necessary restraints of the curriculum may not be made to press more hardly on the student than is absolutely necessary to serve the interests of the examiners.

The provisions of the Dental curriculum, with certain animadversions thereon by Professor Turner, of Edinburgh, have recently engaged the attention of the various licensing

bodies, whose reports on the subject were presented to the Executive Committee of the General Medical Council at its meeting on the 6th inst. According to the regulations at present in force, the Dental student is required to produce a certificate of having spent four years in professional study, and of having received instruction in mechanical Dentistry during three years. Now, to any one who is less of a precisian than Professor Turner, it would surely seem that the above requirements were quite clearly enough defined for all practical purposes. The Council thinks three years a sufficient period for becoming an expert in mechanical Dentistry, and four years of professional study enough to give the student a competent knowledge of the scientific part of his profession. But it has so far carefully avoided expressing an opinion as to how the two periods should comport themselves, whether they should march in Indian file or hand in hand, or something between the two. This vagueness, which to us appears so natural an arrangement, frets the orderly mind of the Edinburgh professor, and he demands that the expression "four years in professional studies" should be more precisely defined. "Is it to mean," he asks, "(a) four years in a Dental school or hospital? or (b) may one year of apprenticeship count as one of the said four years? or (c) may one or two years passed in a Dentist's workshop similarly count?" We really see no object in putting these questions, which have hitherto been left unanswered with the view of allowing each student to put the interpretation on the regulations which he found best suited to his own requirements and limitations, and we are glad to see that the licensing bodies, in their replies, suggest a very similar view.

Professor Turner's other suggestion—that some portion of the three years' instruction in mechanical Dentistry should be allowed to count as a legitimate portion of the specified four years' study, even if spent before passing the preliminary examination in Arts—more worthy of discussion. At present the student is practically compelled to pass the preliminary examination before commencing his four years of professional study; but, as Professor Turner contends, there is nothing

rendering a literary examination necessary to entering on workshop duties, as there is prior to entering on a course of scientific lectures ; and it appears to us very desirable that the student should be allowed to pass his preliminary test exactly when it best suits his own convenience. We are, in fact, in favour of as much liberty being given to the student as possible, so long as it does not interfere with the attainment of the required result, the manufacture of competent practitioners. We regard the preliminary examination as of the greatest importance for the ultimate standing of the profession. At present, considering the very unsatisfactory state of middle-class education in this country, it would be absurd to demand a very high standard of preliminary training from the Dental student ; but we hope that, as years pass on, the standard will be gradually raised, and meanwhile we would advise all Dental students not to be content with the minimum of culture required by the Colleges, but to aim at as wide and as thorough a preliminary education as possible. The authorities on their side will encourage such efforts much more certainly by leaving a wide discretion to the student as to when he should pass his literary test, than by fixing it arbitrarily at a time when most students—especially those of late development—are just beginning to take an interest in general education, and to reap the benefit of their previous years of schooling.

THE Executive Committee of the General Medical Council met on the 6th inst., and found a good share of important Dental business awaiting their consideration. First came a letter from the Secretary of the Dental Department of the University of Pennsylvania, requesting that its diploma should be placed by the Council on the same footing as those of Harvard and Michigan Universities. This letter gives incidentally a curious and not very reassuring account of the condition of Dental education in the States. The faculties of the various Dental schools, it explains, participate in the profits derived from the students' fees, and are, therefore, not

much inclined to take any course which would be likely to reduce the number of their students. The students on their side flock to the schools where the conditions of graduation are most lenient, and hence any attempt that a given institution may make to improve the standard of education by lengthening its course of instruction necessarily involves a reduction in the number of its students and a corresponding diminution in the remuneration of its teachers. The only remedy, as the letter points out, is to be found in a standard of education imposed in all schools alike by the central legislature, as in our own country. The application for recognition was very properly refused by the Executive Committee on the ground that the University of Pennsylvania requires only two years' professional study, a period which every one will admit is quite insufficient for the manufacture of a competent Dentist. Of course in the case of the American colleges the British Council must be guided entirely by the length of the curriculum, as it has no means of judging of the stringency of the examinations.

THE Committee next passed on to consider the replies to Professor Turner's letter, which we publish in another column. The replies were referred to Professor Turner for his observations thereon, and the subject, one admittedly of great interest and importance, will doubtless engage the attention of the Council at its annual session. The Committee next considered the apprentice question, and decided that all students who had commenced their apprenticeship before January 1st, 1878, should be entitled to be registered without diploma under Section 37 of the Dentists Act. Next came the financial statement, in which it was shown that the receipts of the Dental fund for last year amounted to £690 16s. 2d. and the expenditure to £1148 7s. 3d., making the assets of the fund £8839 6s. 11d., or more than £450 less than at the corresponding period of last year. From this it would appear that the annual income of the Dental fund is at present very far from meeting the neces-

sary annual expenditure. After settling some minor business the Committee adjourned.

THE Odontological Society is to be congratulated on a most satisfactory annual meeting. In the first place, its finances are in a very flourishing condition, the surplus of income over expenditure (£193) being the largest ever known. Then, by the operation of a most wise reform, the Society has been able to secure for its new President one whose name—that of Samuel Lee Rymer—is almost more intimately bound up with the subject of Dental reform than any other. The pleasure which the Society must have felt in thus conferring an honour so richly earned will have been in some measure alloyed by its regret at losing the services of his predecessor in the presidential chair, to whom it owes so much for the way in which he has upheld the credit of the Society, and risen to the exceptional responsibilities of the past year. Mr. Rogers's second presidency will long be remembered as an epoch in the life of the Society, not only for its ceremonial *éclat*, but for its having witnessed the introduction of important changes into the respective qualifications for the membership and the Presidency. And last, but not least, the year that has just closed has seen the successful termination of the prolonged and onerous task of rearranging and cataloguing the valuable museum of the Society, which, it may now be safely said, will worthily form a model for all similar collections throughout the world.

THE next number of the 'Journal of the British Dental Association' promises to be one of special interest. Apart from other noteworthy changes without and within, it is to contain a list of the "earnest workers" in "our branch of the profession" compiled by themselves. It is to be hoped, for our credit with other branches of the profession, that no modest scruples will be allowed to interfere with the length of the list. At the same time the flippant need not be discouraged; two journals still remain open to them.

THAT prolific writer, Dr. Magitôt, of Paris, has published two more pamphlets, both representing the result of much labour and patient research. The one deals in an encyclopædic manner with the diseases of the gum, while the other is a clear and comprehensive account of the complications of eruption.

A VERY remarkable case of fatal tetanus, ascribed to the irritation of a carious tooth, was reported some time back in one of the West of England journals. The patient was a shoemaker, residing at Bridgewater, who had enjoyed excellent health until he was seized with violent pain in the side of his head. He was treated in the first instance by a chemist for neuralgia, but the symptoms becoming aggravated Mr. Kemmis, a medical practitioner, was called in. He found the patient insensible, with his jaw locked and immovable. Treatment, however, was unavailing; the man remained insensible, and died in a few hours. At the inquest Mr. Kemmis stated it as his opinion that death was due to tetanus brought about by a decayed tooth, and he characterised the case as a most extraordinary one—a statement with which every one will agree. Simple trismus from some form of dental irritation, generally the difficult eruption of wisdom teeth, is not a very rare phenomenon, and cases of it will be found recorded in several of our back numbers. But general and fatal tetanus from a similar cause is happily of extremely rare occurrence. Mr. Tomes has recorded a case which was apparently due to the operation of pivoting, and Wedl has mentioned one in which tetanus followed the extraction of a tooth. In Mr. Tomes's case, as in the one the particulars of which are given above, death occurred very soon after the first appearance of muscular spasm.

MR. NATHANIEL STEVENSON has addressed to one of the medical journals a not unneeded protest against the invasion of the special field of Dental practice by medical prac-

titioners. "I allude, in the first instance," he writes, "to those frequent cases of facial neuralgia which physicians, surgeons, and general practitioners seem to regard as common ground for practice. As these cases almost invariably arise from some local irritation connected with the teeth, they surely specially belong to the province of Dental Surgery; but doctors hardly ever think of sending them to consult a Dentist until they have dosed and treated them for months, or perhaps years. The cause of facial neuralgia is frequently a difficult matter to discover; the ordinary practitioner does not, as a rule, possess the necessary appliances for the investigation and treatment of these cases, and, therefore, it is due to the patient that he should be advised to consult the specialist first; if he fail, then, but not till then, the doctor should take the case in hand. Again, in chronic dyspepsia the condition of the teeth does not often receive from the ordinary medical man the attention due to its importance; a casual glance, perhaps, when the tongue is examined is considered quite sufficient, and if a gap here or there be noticed nothing is said. I have seen such cases in which there was not a tooth in the head capable of performing its proper functions, and the patients were perfectly cured after being fitted with a serviceable set of false teeth." An analogous complaint would probably be made by every special practitioner, but with much less reason, for the Dental Surgeon is the only specialist whose services are within easy reach in all parts of the country. The real moral, however, to be drawn from Mr. Stevenson's complaint is that some small modicum of Dental education ought to be required of every medical practitioner, not so much with the view of enabling him to treat Dental diseases as of teaching him when their treatment is beyond him. The more highly educated the doctor becomes, both generally and specially, the more will he be inclined to rely on the advice and co-operation of the Dentist.

MR. STEVENSON unfortunately concludes his otherwise admirable letter with a display of petulance against the

Dentists Act, which, of course, has brought down upon his devoted head the wrath of the fond parent of that much-abused bantling. Every one must sympathise with Mr. Smith Turner in his implacable resentment against all who desire to discredit the Dentists Act, but we sometimes wish he had a little more faith in the vitality of his progeny. Mr. Stevenson protests against the careless indifference with which "some of the most influential medical men seem to ignore all the claims of education, and send their patients to those whose only claim to professional status is the fact that they are registered;" and he thinks it necessary that Dentists should protest against this abuse of privilege lest they "should seem to be contented with the low position of equality to which the late Dental Act consigned us all." Considering that Mr. Stevenson's name does not appear in the Dentists' Register his complaint is a little beside the mark.

At the last meeting of the Pathological Society of London Mr. Butlin exhibited a specimen of squamous epithelioma of the upper jaw, closely resembling a case which, it will perhaps be remembered, he communicated to the same society last year. In the present case, the patient was a woman of fifty-eight and the symptoms of the disease—pain and swelling—had only appeared two months before coming under treatment. The neoplasm appeared to have started in the alveolus and thence to have spread up into the hard palate, till it involved the antrum. All the teeth had disappeared on the affected side, but the socket of one of the molars was found to communicate by a sinus with the antrum, which was filled with malignant growth. At the operation the walls of that cavity were found quite destroyed, and the growth more extensive than had been expected; as much as possible was removed, but the woman died five days after from exhaustion. The microscopical characters were those of squamous epithelioma with numerous cell-nests.

THE conversazione which is to be given on Wednesday evening next, January 18th, by the Students' Society of the Dental Hospital of London, promises to be very successful. We are requested to state that any old students of the Hospital who have not yet received tickets can obtain them by applying to the Honorary Secretaries of the Students' Society at the Hospital.

ONE would have thought that that most important Clause in the Dentists Act which exempts registered Dental practitioners from serving on juries was by this time thoroughly well known both to every practitioner and, what is much more to the purpose, to every summoning officer. Such, however, is not the case. A correspondent tells us that he was recently summoned to serve on a jury at Bolton Quarter Sessions, and that when he claimed exemption the Clerk of the Peace, who acted as summoning officer, was quite ignorant of the privilege recently accorded to the Dental profession. It is to be hoped that any necessity for applying for exemption is quite exceptional, but it is all the same of the highest importance that every Dentist should show by invariably claiming it that he really values a privilege such has been won with such a struggle, and the possession of which is still grudged us by the school of which the 'Lancet' makes itself the not too temperate mouthpiece.

A MONTH ago we gave some rough statistics as to the number of the higher qualifications which had been registered by Dental practitioners. Since then several more have been recorded, and the number of such qualifications which will appear in the new register is about fifty, forty-two being the membership of the English College of Surgeons. The Students' Register includes 121 names, the numbers registered in the different years being as follows: 1878, 16; 1879, 30; 1880, 28; 1881, 47. The numbers of yearly entries, it will be seen, are slowly increasing, but are not yet sufficient to replace for the natural waste of the profession.

The Dental Examiner.

[*Note.*—Dental materials and appliances intended for notice in the “Dental Examiner” should be sent to the Editor at 11, New Burlington Street, W. All preparations not generally known should be accompanied by a lucid description and a clear statement of their composition. The formulæ supplied *will not be published* unless a written permission is given by the maker.]

DENTAL RUBBERS.

INTRODUCTION (*continued*).

THE evils resulting from oversteaming a vulcanite piece is not the only mishap which has to be guarded against. The rubber may not be hardened enough, and in this case the work must be vulcanised all over again. It is better to give it the full time, although by doing so, unless the temperature has been kept very low, you stand the chance of making the rubber very brittle. It must also be borne in mind that the higher the temperature the darker the colour. Every degree of heat beyond that necessary to harden the rubber has a tendency to change the colour; indeed, some of the pinks lose all their rose tint and become muddy browns. We consider, therefore, the regulation of temperature a matter of the deepest importance, and we hope later on to give the results of experiments that have been made in vulcanising under 300°.

The next matter we desire to call attention to is the strength of the various rubbers, and this will very much depend upon the temperature at which they have been hardened, so that when we come to speak of the several preparations of india rubber in daily use, we hope to be able to enter very fully into particulars as to strength and colour.

To arrive at a correct estimate of their strength, various methods have been proposed, some by pulling and some by bending, but in all experiments the particular mechanical action to which they will be subjected in the mouth should

be borne in mind, and we consider the mode we are about to describe best calculated to arrive at uniform and reliable results. Batches of various rubbers are vulcanised at the same time, it being understood that they are all supposed to harden at the same heat. They are made in strips, one inch and a quarter in length and three eighths of an inch in width, and are all gauged exactly to the same thickness. Every strip must resemble the other in every particular as to size and thickness, and be perfectly free from flaw, or any file or line mark calculated to assist the fracture. One eighth of an inch of each strip must then be held in a vice placed sideways, and the same measurement be held by a second vice, provided with a rod at the end to register the weight suspended. One inch of the strip will thus be left exposed between the two vices, and if the rubber is of a good tough character it will be sooner bent until the two vices stand at right angles than broken, and if it is brittle it will snap upon subjecting it to a certain weight. The elasticity of some rubbers will be clearly shown, and even if they are bent until the two vices touch each other, they do not break across, but are torn like *papier mâché*. With the same apparatus the strip of rubber may be suspended perpendicularly, and its strength tested by hanging any amount of weight increased until it break, but the horizontal method is the test most suitable when we consider the purposes the rubbers are required for.

One more introductory remark will, we think, clear the way for those practical experiments we desire to enter upon. The specific gravity—that is, the weight that belongs to an equal bulk of each—will vary in most preparations; thus the pinks are the heaviest, the blacks the lightest of all rubbers, even before vulcanising, and it is necessary to go into this matter, because a rubber of a lower price may really be dearer than one higher in price but more in quantity. Some experiments made and published on a former occasion were hardly satisfactory, because we have not each of us got a specific-gravity balance always at hand. We think the easiest way to arrive at general conclusions is to count the number of sheets that go to a particular weight,

each sheet having been subjected to pressure so that they may all of them be of the same thickness and the same size. We are quite aware that manufacturers vary in the thickness of their rubbers as supplied to the profession, but an experiment of this kind is easily made and will settle the relative degrees of cheapness if desirable.

We hope in our next issue to commence our examination of the twenty-three dental rubbers manufactured by Messrs. C. Ash and Sons.

Reviews.

Beiträge zur Zahnheilkunde ; neun Abhandlungen. Von LUDWIG H. HOLLÄNDER, Prof., Dr. Med., Docent der Zahnheilkunde an der Universität Halle. Leipzig, Verlag von Arthur Felix, 1881.

Contributions to Dental Science ; Nine Lectures. By Prof. HOLLÄNDER, M.D., &c.

(SECOND ARTICLE.)

DR. HOLLÄNDER's second lecture on "Amalgam Fillings" is an important contribution to the literature on this much vexed subject, and contains many practical hints which will be found useful by the young practitioner. A good amalgam, he says, should fulfil the following requirements:—First, it must contain no metal which will form soluble salts likely to prove injurious to mouth or stomach; secondly, it must harden soon after insertion; thirdly, it must not become discoloured, though he admits that few amalgams satisfactorily answer this test; and, fourthly, it must not contract or expand after insertion. The greatest enemy to amalgam fillings is sulphuretted hydrogen, which is readily developed in the mouth as a product of decomposition, and which not only has a strong affinity for silver and mercury, but com-

bines even with gold and platinum, when these ordinarily stable metals are in a state of amalgamation. Dr. Holländer lays it down as a strict rule that the less mercury an amalgam contains the longer it will stand, though in our experience some amalgams which require a large amount of mercury, those containing platinum for instance, are very durable. He condemns amalgams of silver and tin, in spite of the views of Flagg and Tees, and prefers one in which a small proportion of gold is added. Essig's formula, which he quotes with approval as a nearly ideal filling, is as follows:—Gold 5 parts, silver 20, tin 25, with mercury 25. It has the advantages of contracting hardly at all, of discolouring but slightly, and of rapidly attaining a very considerable degree of hardness. Five parts of platinum added to the above formula make a very good amalgam, which, however, requires a comparatively large amount of mercury. Copper amalgams ought not, in Dr. Holländers opinion, to be entirely condemned, as he has convinced himself by the examination of fillings which had been in the mouth for over thirty years that they undergo hardly any contraction. The disrepute into which amalgam fillings of all kinds fell some years since, especially in America (where they went so far as to call every Dentist who used them a botcher (Pfuscher), and to exclude him from scientific societies), was probably due to the careless way in which cavities were prepared and fillings inserted. The fact is, however, that amalgam fillings require exactly the same cleanliness and even more careful preparation of cavities than gold itself. Dr. Holländer recommends that the amalgam should be mixed in the hand between folds of rubber dam. He condemns malleting as unnecessary, and considers that the ease with which amalgam can be inserted often renders it better adapted for the filling of large molar cavities than gold, since the prolonged period which a filling with the latter material requires often does more harm to the patient's health than its pretty appearance is worth. In concluding this chapter the author gives details of the method which has been adopted by Zsigmondy, of Vienna, for filling cavities in the front teeth with amalgam. Zsigmondy's

original method was to line the cavity throughout with soft gold foil (generally No. 8), and then to fill with pellets of amalgam coated with gold. Recently, however, he has been using uncoated pellets, and he finds that the gold coating of the cavity alone effectually prevents all discoloration of the teeth. The formula of the amalgam he uses is gold 1 part, silver 3, tin 2.

The next chapter, on "Cement Fillings," may be more briefly dismissed, as it deals with matters on which there is less room for divergent opinions. Chloride-of-zinc cement, Dr. Holländer says, is indicated—first, as a temporary filling in cases of sensitive dentine; secondly, in large cavities where the dentine is almost entirely eaten away, and especially where there are thin overhanging walls of enamel, also as a foundation filling when the pulp is all but exposed; thirdly, as a temporary filling in the front teeth of young patients; and fourthly, in cavities in the temporary teeth. The great drawback to all fillings of this cement is their rapid disintegration under the action of acids. Phosphate-of-zinc cement, on the other hand, is not exposed to this disadvantage, and makes a fairly permanent filling where the saliva has an acid reaction; it also will harden in contact with that secretion. When the saliva is alkaline, however, it rapidly disintegrates, and it cannot be used, like the chloride-of-zinc cement, in cases where the dentine is sensitive or the pulp cavity is nearly laid open. Other disadvantages of phosphate of zinc are that it rapidly disintegrates when in contact with the gum, that it will not keep, and is soon worn away by the use of tooth powders, most of which have an alkaline basis. Thus, while in many cases a cement consisting of chloride of zinc will answer best, there are others in which phosphate cement is to be preferred, and each case must therefore be considered on its own merits in regard to these two competing preparations.

The fourth chapter, on the "Indications for the use of the different filling materials, and on the treatment of the teeth in children," is a short but valuable contribution to a subject in which many will feel that practical guidance is much needed. We extract from it the following aphorisms:

—Gold as a filling material is contraindicated in the case of very nervous patients, in those whose teeth are of feeble organisation, in anæmic girls with irregular menstruation, and in women who are pregnant. In such cases the tissues will disintegrate under the gold, however carefully inserted. There is no doubt, says Dr. Holländer, a circulation of nutritive juices from the capillaries of the pulp to the dentine. A healthy circulation of this kind is necessary to prevent the further breaking down of the dentine, and it is impossible to hope for this unless the blood itself is healthy. We are glad to find our author taking up such a firm position on this point, as there is too great a tendency in much modern Dental teaching to treat the teeth with an entire disregard to general physiological and pathological exigencies. Gold is also, says Professor Holländer, contraindicated in the case of children from ten to fourteen years of age, whose teeth are not yet fully calcified; for the sudden changes of temperature which gold so readily conducts are inimical to the steady deposit of lime salts. Our own experience, however, is that gold fillings can be put into six-year-old molars at the age of nine, ten, or eleven with great success, and will sometimes stand thirty or forty years. For cavities in the front teeth of older persons gold is the only trustworthy filling; it is also of great value for stopping small cavities on the approximal surfaces of the bicuspid, and for simple cavities on the masticating surfaces of both bicuspid and molars. For larger cavities, where a filling would take from two to three or more hours, he would never recommend gold.

It has long been felt in Germany that the prolonged operations fashionable elsewhere are not justifiable, and it is slowly being recognised even in America that such severe interference with vital organs is not without its dangers both to the tooth concerned and to the general organisation. Dr. Holländer does not, therefore, recommend the use of gold in distal cavities of the bicuspid or molar, unless the patient desires it, nor in the case of very sensitive teeth, where, by allowing rapid changes of temperature, it

may lead to irritation and suppuration of the pulp or the deposit of secondary dentine. In these cases a combined filling of cement and gold is more advisable. In the same manner he prefers chloride-of-zinc cement as a root filling, to be covered in with gold if necessary.

After a few paragraphs on the use of gutta-percha fillings, Dr. Holländer passes on to consider the treatment of the teeth in children. "It is in dealing with children," he says, "that the young Dental Surgeon may obtain his most valuable training. Here he can learn that calmness and precision which every Dentist needs so much, and here he can develop that gentleness and humanity, without which no surgeon (Arzt) is worthy of his name." The principles which Professor Holländer has for years adopted in treating the teeth of children are much the same as those laid down by Dr. Quinby in 'Dental Cosmos,' 1880, p. 123.

The next lecture deals with tartar and salivary calculus. The author gives the ordinary views as to the formation of tartar, and recalls the interesting fact that it is said to be very common amongst Mahomedan ladies who have conscientious scruples about using tooth-brushes, because they are made of hog's bristles. In discussing the treatment of tartar, he strongly condemns the dissolving it by means of acids, whether used directly or in the form of the tooth powders and tinctures recommended by the quack. The only scientific treatment is mechanical removal. Where the gum is very hyperæmic or hypertrophied, it will often be necessary to scarify or to cut portions away, stopping persistent hæmorrhage by the application of a ten-per-cent. solution of chromic acid, which must not, of course, be allowed to come in contact with the tooth. For the removal of green tartar Dr. Holländer advises friction with finely powdered pumice stone.

The remaining four lectures will be considered in another article.

Lectures on the Physical Examination of the Mouth and Throat, with an Appendix of Cases. By G. V. POORE, M.D., F.R.C.P. London: Adlard, Bartholomew Close.

These lectures, some of which appeared in our pages last year, are mainly intended for the medical practitioner, but they contain much that is well worthy the careful perusal of the Dentist. They are a model of clear, practical, and sensible writing, and show that the author is a careful, exact, and thorough observer. Accurate observation is the first essential of scientific work of every sort, and the want of it is the fruitful parent of scientific fallacy and unsuccessful practice. Strangely enough the cultivation of this faculty of observation is almost entirely neglected in our public schools; the student of medicine or Dentistry comes to his work with powers utterly untrained in this direction, and often, we fear, passes through his curriculum without any very tangible improvement in them. A volume like the present, which is *par excellence* a manual of practical observation in a certain limited sphere, cannot fail to exert a most beneficial influence in the minds of all who study it with care. The Dental practitioner will learn much from it with regard to the physical signs of lips, tongue, and pharynx, but many will probably feel that they could have supplemented Dr. Poore's observations on the signs derived from the teeth with many valuable hints. The evidence of the teeth is too often overlooked by the medical practitioner, and we think Dr. Poore would have done well to have devoted a little more attention to this part of his subject; but beyond this minor criticism we have nothing but praise for his admirable little volume.

THE 'Transactions of the International Medical Congress' are now ready for distribution, and copies can be obtained by applying to J. W. Kolckmann, of 2, Langham Place, W. The proceedings of Section XII are included in the third volume.

Reports of Societies.

ODONTOLOGICAL SOCIETY OF GREAT BRITAIN.

ANNUAL GENERAL MEETING, JANUARY 9TH, 1882.

THOS. A. ROGERS, Esq., President, in the Chair.

ON taking his seat, the President declared the ballot open for the election of officers for the ensuing year; Messrs. A. G. Hockley and Willoughby Weiss were chosen to act as scrutineers.

CASES AND SPECIMENS.

MR. HENRY SEWILL showed casts of a remarkable case of enlargement of the external alveolar wall of the upper jaw; the bony mass was most marked over the molar teeth. The patient was a gentleman, aged 39, and so far as Mr. Sewill could learn, the enlargement was not now increasing.

With reference to some cases of projection of the front teeth in women, to which he had called attention at a previous meeting, Mr. Sewill now showed a model of a case in which an upper lateral was the only tooth affected. There was no evidence of absorption of the alveolus, or other sign of disease.

He also mentioned the case of a young lady, aged 15, who had come to him some time back with an upper temporary central incisor still in place. As the tooth was very loose Mr. Sewill removed it, but its permanent successor had not yet appeared, and he had therefore just fitted an artificial tooth in its place. In this case the friends were rather disposed to blame him for having removed the temporary tooth, and he was anxious to learn what was the general opinion of members respecting the proper course to pursue in such cases.

At the April meeting he had related a case in which paralysis of the parts supplied by the inferior dental nerve had followed extraction of a lower wisdom tooth. Up to June, when the patient went away into the country, but little return of sensation had taken place. But when Mr. Sewill saw her again on December 9th, he was pleased to find that almost complete recovery had taken place; some

slight impairment of sensation still remained, but practically the patient might be said to have got over her trouble.

Lastly, he handed round a model showing the harm that might be done by operating for the cure of cleft palate in unsuitable cases. The result of the operation in this instance had been to leave the patient in a worse condition than she had been before.

Mr. HUTCHINSON thought it was generally safer to leave temporary teeth in the mouth. He had known several cases in which temporary teeth had been removed and the permanent teeth had not appeared. He had now a patient, aged 35, one of whose temporary canines was still in place and useful.

Mr. CHARTERS WHITE related the case of a girl, aged 24, whose upper temporary canines had been in place, though the permanent canines were also erupted. Mr. White removed the former; they were pretty firmly attached, but on examining them he found that the roots were absorbed.

Mr. COLEMAN thought that the best treatment in such cases was to fit a plate with artificial teeth; the pressure of the plate had a very good effect in hastening the eruption of the permanent teeth.

Mr. MARCUS DAVIS said that on one occasion he had a subject for dissection, apparently about fifty years of age, in whom one of the second temporary molars was still in place. Mr. Davis made a section of the bone below it, in order to ascertain whether the permanent molar was present. He found the space in which it should have been, but there was no sign of the tooth itself.

The PRESIDENT remarked that no general rule could be laid down for these cases; each must be treated according to circumstances. Considering that in Mr. Sewill's case the tooth was so loose that he was able to remove it with his finger, he thought he was perfectly justified in so doing.

THE TEETH OF THE COMMON PIKE.

Dr. STERNFELD showed some beautiful microscopical specimens illustrating the structure and development of the teeth of the common pike, and gave a description of them. The purpose of the specimens and of his remarks was to prove that the crown of the pike's tooth was really composed of vaso-dentine, although it had been described by Mr. Charles Tomes as being composed of osteo-dentine.

Mr. F. CANTON and Mr. CHARTERS WHITE bore witness to the great beauty of the specimens, which had evidently

been prepared and mounted with extreme care, and the latter added that as the result of his examination of them, he thought they quite bore out all that Dr. Sternfeld had stated in his description.

FIBRO-CYSTIC TUMOUR OF LOWER JAW.

Dr. STERNFELD also read notes of an interesting case of a very large fibro-cystic tumour involving the left half of the lower jaw, and showed photographs of the patient before and after the operation. The bone was sawn through in front, disarticulated behind, and removed with the tumour. The patient made a good recovery, and although two years had now elapsed since the operation, no recurrence had taken place.

A STUDY ON DISEASES OF THE TEETH.

Mr. HOWARD MUMMERY then read an abstract of a paper by Mr. C. W. Dunn, of Florence, entitled "A Study on Diseases of the Teeth." After remarking on the very unsatisfactory explanations which had been given in order to account for the marked difference which existed between the teeth of civilised and uncivilised races, and alluding to the fact that even among the former some have their teeth more, and some less, diseased, Mr. Dunn said it had occurred to him that some information might be gained by printing a series of questions and sending them to the communal doctors in the most remote and little known parts of Italy. That kingdom contains a population subject in different localities to very different conditions of life. On the coasts of the mainland and of the islands—Sardinia, Sicily, and Elba—the inhabitants eat much fish; in the cities more meat is consumed; whilst in the country districts many live almost exclusively on Indian corn flour, chestnut flour or rice, and very many eat neither meat nor fish. The variations in soil and climate are almost as great, including low marshy plains and elevated mountainous districts, land of wonderful fertility in some parts and in others bare and sterile.

With the assistance of a friend, Signor Calvetti, the following series of twelve questions was drawn up and extensively circulated:

1. In the locality frequented by you, which disease of the teeth predominates, caries or periostitis? Do young children suffer from either of these diseases?
2. Is the population in general robust or weakly?
3. Have you been able to observe whether the teeth of

those living in towns and cities are better than of those living in the country?

4. Which suffer more from the teeth, the inhabitants of the plains or those of the hills?

5. Are there mines in your neighbourhood? State the nature of them. Have you been able to observe whether those working in the mines suffer less or more from their teeth than others living in the neighbourhood?

6. What is the usual drink—beer, spirits, wine, or anything else?

7. Do the people smoke much or chew tobacco?

8. What is the usual daily food?

9. Are there forests, bogs, lakes, hills, or downs in your neighbourhood?

10. Is there a tendency in the teeth to become loose at an early age?

11. On what soil or formation are you?

12. Can you make any special observation on the formation of the enamel, the shape, size, or regularity of the teeth, or any other facts which might be interesting?

To these questions he had received forty-four complete sets of answers; and of these he gave an analysis. In twenty-two places caries was said to be rife. These included the districts of Bologna, Palermo, the Waldensian valleys, Verona, &c. The causes assigned were marshes, rice grounds, malaria, stagnant waters, excessive irrigation, lead mines; scrofula and anæmia predominated in these districts, and the food was often poor and scarce. In fourteen places there was said to be little caries; these were for the most part situated on gravelly soil or in the vicinity of the sea, or they were mountainous districts. There were only four places where the teeth were said to be good; of these, Perrero, in Piedmont, is 1500 mètres above the level of the sea; the others were Bergamo, Bordeaux, in France, and the vicinity of Athens. All agreed in saying that those who worked in the open air generally suffered little; thus shepherds and charcoal burners had good teeth.

As regards food, the chief difference was that where good teeth existed the people were said to be temperate, drinking wine only and no spirits; in districts where caries was common the people drank spirits, liqueurs, wine, and beer. Smoking did not appear to predispose to caries.

Mr. Dunn admitted that the facts as yet received were too scanty for the formation of any precise conclusions, but he thought they were not without interest, and offered them as a contribution towards a better knowledge of the subject and

in the hope that others would carry out inquiries in the same direction.

The PRESIDENT said that Mr. Dunn had collected some very valuable information, but he thought that the ground covered by the questions might be extended with advantage. He explained that the reason why the paper had been read in abstract was that it had already been presented to another society—the Anthropological Society of Florence; and it was contrary to the rules of the Society that papers should be read there which had been previously discussed elsewhere.

REPORTS OF TREASURER AND LIBRARIAN.

Mr. PARKINSON then read his report as Treasurer. The receipts during the past year had been £557, and the expenditure had been £364, leaving a balance of £193, a larger surplus than he had ever been able to report before. For this they were largely indebted to the exertions of Dr. Walker, who had by careful management succeeded in materially reducing the cost of the 'Transactions.'

Mr. WEISS, as Librarian, also handed in a very satisfactory report. He called attention, however, to certain deficiencies which he had hoped might be supplied. The first volume of the 'British Journal of Dental Science' was incomplete; he had only an imperfect set of the 'Forceps.' The 'Transactions of the Society of Arts' for the year 1826 was a desideratum, and so was a copy of Mr. Chitty Clendon's work; there were some other omissions in the catalogue which he should like to see rectified.

Mr. HUTCHINSON announced that the museum was now in perfect order; the new catalogue had been printed, and copies would be sent to all the members with the January number of the 'Transactions.'

The Scrutineers announced that the list of office-bearers proposed by the Council had been unanimously adopted. It is as follows:

President.—Samuel Lee Rymer, Esq.

Vice-Presidents.—Messrs. J. S. Turner, Charles S. Tomes, and Henry Moon (*Resident*); and Messrs. J. E. Rose, of Liverpool, Walter Campbell, of Dundee, and William Doherty, of Dublin (*Non-resident*).

Treasurer.—James Parkinson, Esq.

Librarian.—Felix Weiss, Esq.

Curator.—S. J. Hutchinson, Esq.

Honorary Secretaries.—Messrs. J. Howard Mummery (Foreign Correspondence), F. Canton (Council), and T. F. K. Underwood (Society).

Council: Resident.—Messrs. Charters White, G. Wallis, W. F. Henry, A. Coleman, J. Stocken, Dr. Walker, J. Lyons, G. A. Ibbetson, and A. Gibbings. *Non-resident.*—Messrs. T. J. Browne-Mason (Exeter), W. Williamson (Aberdeen), J. E. Palmer (Peterborough), William Fothergill (Darlington), A. Jepson (Leamington), and Martin Magor (Penzance).

PRESIDENT'S ADDRESS.

The PRESIDENT then proceeded to deliver his valedictory address, which consisted of a retrospect of the events of the past year. Fears had been expressed at its commencement that the supply of papers would suffer from the competition of the Congress, but no inconvenience had arisen from this cause. Amongst those with which the Society had been favoured, those of Mr. Charters White, on the "Gustatory Organs of the Tongue," of Mr. Stocken, on "Constitutional Remedies in the Treatment of certain Dental Affections," of Mr. David Hepburn, on "Cases of Suppuration having a Dental Origin," of Dr. Richardson, and of Mr. Coleman, amply sufficed to place the session just passed on a level with any which had preceded it.

In the early part of the year a long-pending question had been decided, and the "qualification law" would come into operation next November. It might be advisable to mention that the 5th of June would be the last occasion on which undiplomaed candidates could be elected, and that therefore all such as might be desirous of joining must be proposed not later than March 6th.

After referring to the satisfactory nature of the reports which had just been read by the Treasurer, Librarian, and Curator, and remarking upon the services which had been rendered to the Society by Mr. Willoughby Weiss in arranging the museum and drawing up the descriptive catalogue, Mr. Rogers went on to recall the changes which had taken place in the Society during the past year. Sixteen new members had been elected, four had resigned and four had died. The losses by death included Mr. Norman King, of Exeter, Mr. Isaac Sheffield, and Mr. Normansell. The death of Mr. Napier, formerly a member of the Society, was noticed, and also that of Mr. J. Crooks Morison, who, although not a member, was well known to, and deeply regretted by, many of those present.

Mr. Rogers then alluded to the additions which had been made to Dental literature by Mr. Oakley Coles, Mr. Coleman, and Mr. Arthur Underwood, and to the establishment of

the 'Dental Record.' Amongst the events of the year he had also to mention the elevation of Mr. E. Saunders to the Presidentship of the Metropolitan Counties Branch of the British Medical Association, and of Mr. Charters White as President of the Queckett Microscopical Club; the one as the successor of Andrew Clark, John Wood, and Habershon, the other of Lionel Beale, Huxley, and Cobbold. But, of course, the great event of the year had been the Medical Congress—a subject which he felt it was impossible to treat of adequately in such an address as that which he was then called upon to deliver. Each individual was probably most impressed with that one of its aspects which most nearly affected himself—whether philosophical or practical—and for himself he bore in chief remembrance the clear yet profound exposition of his views upon Dental education and its relation to general medical education, which was so ably put forward by one of the chief actors in our great educational movement.

In conclusion, Mr. Rogers congratulated the Society on its selection of his successor, the first fruits of the new law which enlarged the choice of presidents. As for himself, some of his closest friendships had arisen out of his work in the Society, and many would be the pleasant associations in connection with it which he should bear away and hold in remembrance as long as memory lasted.

Mr. IBBETSON, in an excellent speech, proposed a hearty vote of thanks to the retiring President. This was seconded by Mr. J. R. MUMMERY, and carried with much applause.

The PRESIDENT, in returning thanks, acknowledged his obligations to the Secretaries and other officers, and moved that the thanks of the Society be given to them.

This having been carried by acclamation, Mr. PARKINSON replied, and the Society then adjourned.

BROMIDE OF POTASSIUM IN INFANTILE DENTITION.—M. Peyraud recommends this drug for relief to the painful and troublesome processes of infantile dentition, and employs the following prescription: R.—Bromide of potassium, 2-3 grammes; honey, 15-20 grammes; water, q. s. After solution has taken place, heat and evaporate to the consistency of honey, adding alcohol to preserve the mixture. By rubbing this upon inflamed gums the mucous membrane is attacked and denuded, the hyperæmic circulation is diminished, the inflammation reduced, and the projecting points of the teeth will gradually pierce the gum, and the contemporaneous inflammation of the mouth will be subdued.—*Journal de Thérapeutique.*

Literary Notices and Selections.

REFLEX ULCERATION IN THE EXTERNAL AUDITORY MEATUS CAUSED BY DISEASED TEETH.

IN the 'American Quarterly Journal for Otology' Dr. C. H. Burnett, of Philadelphia, has an interesting paper on the above subject. In discussing the etiology he points out that "the connection between teething and earache in young children has long been observed, and is mentioned both by general and special writers." Among the latter, Rau states that in many instances each new tooth, as it cuts its way through the gum, is attended by a mild form of external otitis, characterised by a mucoid secretion. The case particularly observed by Dr. Burnett, the subject of the article, occurred in an adult. In it the *ulcerative* process was chiefly confined to the meatus; but at one time there was perforation of the membrane. This condition does not seem to have been specially intractable under treatment, but it returned repeatedly, the ear not remaining comfortable for more than a month at a time. While attending Dr. Burnett during one of the attacks of earache, the patient happening to mention that her teeth had long given her discomfort, it was noticed that the first and second lower molars of the same side were decayed, and the gums about them inflamed and sensitive. The teeth were extracted, and from that day to the time when Dr. Burnett wrote two years afterwards, no pain or other symptom of aural disease had shown itself. Dr. Burnett makes out, with great probability, that it was one to which the following general statement would be applicable—viz. the effect of any irritation in a vaso-motor nerve tract may be to excite *vessel dilatation* through diminished inhibitory nerve power in a correlated area. Now, without following Dr. Burnett in seeking to establish the correlation between the dental *area* and the external auditory canal, we

may say, that the practical outcome of the case and his remarks upon it corroborate the truth of the teaching frequently expressed, but frequently forgotten, that in all cases that have anything of the neuralgic character, whether there is a distinct local *lesion* or not, the state of the teeth should be inquired into ; and this reminds us specially of one, in which a severe neuralgic pain as far from the mouth as the shoulder, disappeared as if by magic on removing a decayed, but in no other way troublesome, tooth.—*Glasgow Medical Journal*.

CONGENITAL MACROSTOMA.

Two cases of this deformity, accompanied by malformation of the auricles and by the presence of auricular appendages, were described by Mr. JOHN H. MORGAN, at a recent meeting of the Royal Medical and Chirurgical Society. One patient was a year old and very small. The deformity consisted of a fissure-like prolongation of the mouth, downwards and backwards into the left cheek, and extending about three quarters of an inch, and involving all the structures of the cheek. The lower maxilla was considerably smaller than normal, and the movements were not symmetrical. The external auditory meatus was larger outwardly, and placed more anteriorly, than usual, and ran backwards, where it became narrow in front of the *membrana tympani*, which, with the ossicula, was believed to be natural. Two so-called auricular appendages were placed in a line, one below the other, on the cheek, between the tragus and the extremity of the fissure. One similar growth existed on the right cheek, and there was a similar but less morbid condition of the meatus on this side. The hearing was believed to be good. There was no hereditary history. The other case was that of a delicate child, aged five, who presented an almost identical condition on the opposite side of the face. The mouth was prolonged into

the cheek on the right side of the face, and there were two similar growths on the chèque, and the external meatus of each ear was expanded outwardly. The malformation of the lower jaw was not so evident, but it was smaller than usual. Hearing was fairly good in both ears, and the child talked naturally. There was no history of hereditary malformation. Mr. Morgan said that the two cases justified the observation, that malformations of these parts were more frequent in females; but the only two cases of macrostoma hitherto described had not been accompanied by any deformity of the ears and their appendages. It was suggested that the deformity of the mouth was due to non-union of those parts of the first branchial arch which formed the upper and lower jaw, and not to any error of formation of the oral opening; whilst the auricular appendages were probably aberrant remnants of the opercular skin-fold of the first post-oral branchial cleft. They were much more common in all domestic animals than in man; but the author had found them in two cases lately, in neither of which was there any branchial fistula, whilst they were not present in a case of branchial fistula, in front of the right sterno-mastoid, in a boy. The patients were exhibited to the Society. Two questions were suggested by the cases. Why should the deformity be more frequent in females than in males? What was the influence of maternal impressions in the prevention of such deformities? If the influence of such impressions were admitted, why should small portions of the germinal membrane go wrong? No doubt an imperfect development of the first branchial cleft was connected with the deformity of the ear and defect of the mouth. As regarded operation, he did not anticipate much difficulty; but the younger child was in an unfavorable condition. He thanked Mr. Barwell for having placed the elder child under his care. He had endeavoured to ascertain, by means of correspondence through the parents, whether there was any similar malformation in other members of the family, but none could be discovered.

EXTRACTS FROM 'VERNON GALBRAY; OR THE EMPIRIC:'

WITH NOTES AND REFERENCES BY THE AUTHOR.*

(Continued from p. 39.)

THE house that Mynheer Moses engaged upon his coming to London was a very large one, and situated in the most fashionable part of the metropolis. Its former occupant had been a Dentist, who, dying in somewhat straightened circumstances, Le Mo purchased the lease and the goodwill that attached to the name from the widow, so that he might be able to announce, "Established over forty years."

It had an imposing-looking entrance, and a large brass plate on the street-door, with the name, "Vernon Galbray, Surgeon-Dentist," inscribed upon it. We shall presently relate how the adventurer came to change his name, for he was clear-sighted enough to perceive that Samuel Levi Moses, although appropriate enough for a money lender, was hardly suitable for the profession he had chosen.

From a spacious hall a door led into the front parlour, which was styled the "reception room," and from that apartment another door communicated with the "operation room," which had a third door leading back to the hall again. All the appointments were made with the strictest regard to good taste; the furniture being old and massive, the pictures dark and obscure, and the books which filled the bookcase, and lay on the table, old and well-thumbed. Perhaps the ornaments that stood on the mantle-shelf might be considered a little too large and bright, and the curtains that shaded the windows too new and glaring; still the whole effect was imposing, and calculated to impress the visitor with a favorable opinion of the owner's position in life.

Upon a closer scrutiny of the apartment that impression was strengthened, for on the sideboard stood a silver cup with an inscription, "Presented to Vernon Galbray by a few friends in recognition of his sterling worth," and on the table was a large volume with a dedication, "To my old friend Vernon, in remembrance of kindly services rendered to the author."

A visitor could hardly fail to notice also a little square box, on the lid of which was printed, "Contributions for the Widow and Orphans' Asylum." So that united with his "sterling worth," there was a tender sympathy for the welfare of his fellow-creatures, very refreshing in these cold money-making days. * * * * *

* 'Vernon Galbray; or the Empiric.' E. T. Whitfield, 178, Strand. 1875.

A year has passed away since Mynheer left the little shop in Rotterdam. He did as he proposed to do—collected his money together—came over to England—made arrangements to purchase the lease and goodwill of the house, and then returned for his wife and daughter, bringing also with him his poor assistant Doornspyk.

At first Madame was sadly distressed at leaving the old house, where they had lived so many years, and in which Adele was born, but the bustle of London, and the many amusements Le Mo provided, soon diverted her attention from the past. The good wife was delighted with the gay dresses her husband purchased for her, and was not altogether displeased at the attention her good looks excited. At the theatre her round fair face—set off to the greatest advantage by the ornaments she wore—was sure to be the centre of a dozen pairs of opera-glasses, and it must be acknowledged that when animated and flushed by the exertion of preparing for any public assembly, she did look very lovely.

Her fair skin and full figure seemed the perfection of health; and although her expression might in the smallest degree have indicated the race from which she sprang, yet it in no way detracted from the pleasing character of her face. Le Mo was very proud of his wife's good looks, but he was prouder still of the inquiry those looks elicited.

“Who is that handsome woman in the private box on the left?”

“Don't you know? That is Mrs. Vernon Galbray, the wife of the celebrated Dentist.”

This was all the crafty adventurer wanted. “Everything I possess must advertise me,” and he did not scruple to sacrifice even his household gods at the temple of Mammon.

But to return; when Mynheer had purchased his residence, and laid the foundation stone of that fortune he was convinced he was about to make, the next thing was to fix upon a name.

“I must have,” he said, “a name that vill sound vell and a name that vill look vell too. It must appear at the head of advertisements, on cards and announcements. It must be seen at street corners and in public places, in music halls and at railway stations. In short, that name must become a household vord, and Samuel Levi Moses would never do at all.”

He took up the directory and gave himself a quiet hour's study. Galbraith at first attracted his attention, but finding a good many of that name, and fearing it might be used by some one else who had a better right to it, he changed it to Galbray. “That sounds vell I think, and looks noble.”

He then hunted again in the same book, and hit upon Vernon, which he thought appeared light and pretty; he then put the two names together, and after another hour's reflection called upon a friend and got him to sound them well in good broad English, and

to write them in large hand and a flowing running hand, and at last determined upon having them printed, and seeing how they looked in type.

Although Le Mo was not the man to do anything by halves, still he did nothing in a hurry, and it was a full month before "Vernon Galbray" appeared on his door. In another week his card-plate was engraved, and one for his wife also.

He brought the dame to London, enjoying in no small degree the series of surprises he had in store for her: and when at last he addressed her as Mrs. Vernon Galbray, the laughter became infectious, and the little woman joined in the merriment. So that altogether the old shop was soon forgotten, and Rotterdam seemed but a poor place when viewed from London.

Having put his house in order, Vernon Galbray (for by this name we shall henceforth call him) proceeded to look out for two assistants: one to take charge of the mechanical work (for Spyk was only fit to be the drudge), and another to manage the literary department.

The Dental assistant was readily obtained, and as the goodwill carried with it a small connection there was something at once to go on with; but the literary work required a less-easily procured helper, and a suitable man was not to be found in a moment. At length, however, Vernon was introduced to a broken-down medical student, whom drink and dissipation had reduced to a condition of abject poverty. He had commenced life with brilliant prospects. Highly connected, naturally clever, and liberally educated, he came to London to pass his examination, in order that he might enter the medical profession; but allowing year after year to pass without advancement—ever putting off until to-morrow the studies which should have been mastered to-day—his friends at length discarded him. His relatives, seeing no chance of his reformation, allowed him a few shillings a week to keep him from starvation; and he managed to add, by fits and starts, a trifle to his income by literary employment. The adventurer found in him a ready tool to assist him in his schemes; to answer his letters and arrange his announcements.

Tom Rutter (for this was the name he went by) commenced by collecting the advertisements of other men, and those parts Mr. Galbray liked he underlined, so that at last all that was required was to put the various bits cleverly together, and from them to construct a flaming announcement. The secretary (for so Galbray designated him) advised his employer to put after his name a number of letters, and as these letters merely represented that he was a member of an institution no longer in existence, there was not much fear of any one disputing the point with him.

It is very remarkable the simple way in which many of

the public receive these fictitious announcements. The letters M.C.D.E., although meaningless at the present day—for the College of Dentists of England has long since ceased to exist—are still employed, and it may not be out of place to remark that many of those so employing these letters never were at any time members of that institution. It may also be advisable to remind the public and the profession that an attempt was made to buy up the unused certificates and diplomas in the hands of the printers so that they might be used by the unscrupulous.

The advertisement finally decided upon set forth that Vernon Galbray had been established over forty years—that his great experience and practical talents enabled him to promise success even where every one else had failed. That he had taken out letters patent for improvements in the construction of artificial teeth—that his operations were all painless—that his works were equal to those of nature—that his testimonials were innumerable—his terms liberal, and his consultations free.

“Dat vill bring them down, I think, eh?” he said, upon his secretary reading the paragraph over.

Tom Rutter agreed with him, and promised that the advertisement should appear in all the daily papers.

“I vant you now, Rutter, to make up for me a few paragraphs for de inside of de papers, and I vill pay you vell if you can get them inserted. You say you know de fellows dat make up de news. Come, come, you must try, and if you succeed, I vill give you five pounds.”

Five pounds constituted, in his present position, a mine of wealth to Tom Rutter, and he eagerly set about his task. His plan was precisely similar to that already practised with so much success. He cut out of the papers (more particularly the country ones), and adapted for his employer’s benefit, those neat little paragraphs found in their corners. One lamented the sad injury the use of impure materials was making in the health of hundreds of patients; that cancer and other diseases might be traced to the corroding plates put into the mouths of the unwary; at the same time intimating that by the system adopted by Mr. Vernon Galbray all such impurities were avoided; and then followed a short panegyric on the beauty and usefulness of the various processes patented by that distinguished practitioner.

Another similar paragraph would call the attention of the British public to the value of atmospheric pressure as a means of adjusting artificial teeth, incidently remarking that this wonderful discovery was made by that eminent Surgeon-Dentist Vernon Galbray nearly

twenty years ago, and had been practised by him with uniform success in over five thousand cases.

"You must understand, sir," said Rutter, "there is a good deal of difficulty in getting this kind of thing into the London papers, but the country, sir,—the country works well. I could throw off a few lines that my friend Straggles would get into the suburban press."

"Do so by all means, my goot friend, vot would they charge?"

"Ten shillings an insertion would do it, but there is a difficulty—a great difficulty, sir," and the secretary hung his head, trying to appear abashed.

"A difficulty, vell, tell me, vot is it?"

"You can perceive, sir, that circumstances over which I have little or no control have reduced me to a position I must term embarrassing, and I might say unenviously trying. My togs—"

"Togs?" cried the Dutchman in astonishment.

"That is the familiar mode of characterising our habiliments," the secretary explained, holding up the skirt of his threadbare frock coat. "A temporary loan would free me from a world of anxious trepidation. You must understand, sir, that much as I dislike the system of loans—to say nothing about the interest, which is ruinous,—I have contracted a little debt with Straggles. The amount is but a crown—yet a crown has been the cause of many a disagreement before to-day.

"A crown?" Vernon echoed, more puzzled than ever.

"A crown—five shillings is the paltry debt; but, as I said before, a temporary loan would set me up, and I should ever subscribe myself (in a new suit at 35s.) your much obliged and ever indebted servant."

"Look you here, Mr. Tom Rutter, as you call yourself, I am a plain man—"

"Very," the dependent added, *sotto voce*.

"I wish to act all straight down and up vith you, and if you vill only listen to me—"

"I am all attention, sir, as I should be to the voice of the nightingale."

"I say if you vill do vot I desire, and keep in a state fit to be seen, I vill be your friend—you understand?"

"My mind was never clearer, and I never more needed a friend than at this moment. Do with me what you will," and he endeavoured to thrust the fingers of his right hand gracefully into his waistcoat pocket, but in attempting to do so displaced the slender fastening that held that garment together, and it flew open, greatly to the wearer's disgust.

"I will give you this five pounds," Galbray continued, "but listen to me, my fine fellow; if you are not here to-morrow, dressed like a

gentleman, I dismiss you. See your friend—pay your debt—get the notices into the papers, and then come to me.”

Mr. Tom Rutter took the bank-note offered to him in his hand, held it up to the light, ruffled it between his finger and thumb, then turning it about very carefully, scrutinised the water-mark.

“You have no occasion to fear. It is a goot one,” the master said, eyeing him narrowly.

“I have never doubted it, sir, but we have been strangers so long that I have forgotten the secret mark, and in my present miserable plight might find it difficult to change it. Besides, sir—if you will allow me to take you into my confidence—I have no desire that my friends should know I have so much money in my possession.”

Vernon smiled, and went out of the room to get gold, and took the opportunity at the same time to call Spyk to him.

“Ven my secretary leaves me”—he liked the word secretary, and never failed to use it whenever he had an opportunity—“you must follow him—don’t let him see you—but return and let me know where he goes to.”

He then re-entered his reception room, in which Rutter, profiting by his absence, made an examination of the money-box; laying it down with the contemptuous remark that there were more brass buttons than coins in it.

Tom Rutter, taking the five sovereigns, commenced a flowing speech, but he was cut short by his employer reminding him that he was expected to show himself in the morning, decently attired, and that if he failed to do so he would at once be dismissed from his situation; he, therefore, contented himself with making a low bow, and putting his hat on the top of his head (for it was at least three sizes too small for him), sauntered leisurely down the street, followed by Spyk at a respectful distance.

(To be continued.)

Tin Foil.—“H.” writes in the ‘American Journal of Dental Science:’ “The cervical wall of the proximal cavities in bicuspid and molars is *the* point about which we feel anxious. Many of our otherwise durable gold fillings fail there. As tin *seems* more preservative, of late we have been using in some cases a few folds of this metal to start the filling. Several years’ test—the only true test is time—seems to encourage this procedure, so much so that it is occasionally applied to incisors where the cavities reach under the gums. If carefully used it will not show. There is nothing new in this; indeed, we believe the idea is so old as even to be new to the youngest; but it may save a tooth otherwise in doubt. Said a most excellent operator lately, ‘twenty-five years’ experience has demonstrated that I can save more teeth with tin foil than with gold.’”

Dental News.

THE GENERAL MEDICAL COUNCIL AND THE DENTAL CURRICULUM.

AT the meeting of the Executive Committee of the General Medical Council, in November, a letter was read from Professor Turner, of Edinburgh, suggesting the advisability of defining more precisely the meaning of the Council's regulations with respect to the education, preliminary examination, and registration of Dental students. This letter was sent to the various licensing bodies, with the view of obtaining their observations on the subject. Answers have been received from three of them, which we print in full below, together with Professor Turner's letter. They were communicated to the Executive Committee at its meeting on January 6th, when it was resolved to refer them to Professor Turner for his observations on them, and the whole subject will probably be brought before the General Medical Council at its next meeting.

Communication from Professor Turner :

Edinburgh, October 31st, 1881.

MY DEAR MR. MILLER,—As you are aware during the autumn some questions have arisen as to the meaning of the Regulations of the General Medical Council relating to the education, preliminary examination, and registration of Dental Students. I am desirous that you should bring the matter before the Executive Committee so that more specific regulations may be framed.

1. In the "Dental Curriculum" approved by the General Medical Council nothing is said of apprenticeship. A certificate of having been engaged four years in professional study is required. Medical Students are allowed to count one year of apprenticeship as one of the four years of professional study. Ought not Dental Students to be put on the same footing?

2. Three years' instruction in Mechanical Dentistry is required. It is not stated if these years are to be during the four years of professional study, or may be taken, in whole or in part, antecedent to registration as a Dental Student.

3. It seems advisable, therefore, that the expression "four years in professional studies" should be more precisely defined. Is it to mean: (a) four years in a Dental school or hospital; or (b) may one year of apprenticeship count as one of the said four years; or (c) may one or two years passed as a Mechanical Dentist in a Dentist's workshop similarly count?

4. May the time spent under (b) and (c) of (3) be regarded as a legitimate portion of the specified four years, even if spent before passing the preliminary examination in Arts, that is to say, before

registration? It seems to me only reasonable that some portion, if not the whole, of the three years to be spent in Mechanical Dentistry should be allowed, even if taken before registration, since there is nothing rendering a literary examination necessary previous to entering on workshop duties as there is prior to entering on a course of scientific lectures; and secondly, it will scarcely be practicable to go through an efficient training in the workshop, if during the same period the Student's time is to be occupied in attending several courses of lectures, and in following the practice of a Dental hospital.

Believe me, very truly yours,

WM. TURNER.

(a) Reply from the Royal College of Surgeons of England :

Lincoln's Inn Fields, W.C.,

22nd day of December, 1881.

SIR,—I have submitted to the Council of the College your letter of the 22nd ultimo, forwarding a copy of a letter from Professor Turner in reference to Dental Students, and a copy of a resolution thereon of the Executive Committee of the General Medical Council, and requesting that the Council will favour the Executive Committee with their opinion thereon, and I am desired to reply thereto as follows:—First, in respect of the questions raised in Professor Turner's letter under the head (a); and, secondly, in reference to the Resolution of the Executive Committee under the head (β) viz. :

(a) Professor Turner's questions.

(1) That the four years' curriculum for a Dental Student required by the regulations of the College includes apprenticeship.

(2) That the three years' instruction in Mechanical Dentistry required by paragraph 9 of the College Regulations can be taken concurrently with the other parts of the curriculum, and be included in the four years, but not in any case before the passing of the necessary Preliminary Examination.

(3) That, in the opinion of the Council, it is not necessary to more precisely define the expression "four years in professional studies," as, from the College Regulations, it is believed that Candidates for the Dental Diploma clearly understand that the whole curriculum of professional study can be completed within the four years; that the expression "four years" does not mean (a) "four years in a Dental School and Hospital;" that one year of apprenticeship (b) does count as one of the four years; and that two years passed as a Mechanical Dentist (c) do count as two of the four years, as it will be seen, on reference to paragraphs 3, 4, 5, 6, 7, 8, 10 of the College Regulations, that the rest of the curriculum can be completed in two years.

(4) That the time spent under (b) and (c) cannot, by the College Regulations, be considered as a legitimate portion of the specified four years, if spent before passing the Preliminary Examination in Arts, for, as has already been stated in answer to Question 2, in no case can any part of the curriculum be taken out before passing the Preliminary Examination.

(β) The Resolution of the Executive Committee :

"That the Council cannot consent to admit to examination under conditions more or less exceptional, Candidates who have commenced the study of Dentistry since the 8th of September, 1859, inasmuch as the curriculum of professional education laid down in the College Regulations has been for many years in force, and has been required hitherto of all Candidates excepting those who either had com-

menced the study of Dentistry or had been in practice as Dentists before the above-mentioned date."

I am, Sir, your obedient servant,

EDWARD TRIMMER,

W. J. C. MILLER, Esq.

Secretary.

(β) Reply from the Royal College of Surgeons of Edinburgh :

The Royal College of Surgeons having received a communication from the Medical Council relative to certain points in connection with the Dental Curriculum and Examinations, as well as in respect to Clause 37 of the Dental Act, the President's Council, along with the Dental Examining Board, met for its consideration, when it was resolved that the following reply should be sent to the Medical Council :

The principal questions submitted for the opinion of the College seem to be as follows :

(1) What constitutes "a year" of professional study?

(2) Whether an Apprenticeship, general or merely mechanical, and current during such a year, should be counted as professional study?

(3) Whether the three years' mechanical instruction in Dentistry, required by the curriculum, may be taken *before* or must be taken *after* passing the Preliminary Examination?

In reference to these questions the College has to submit :

(1) That "a year" of professional study means a Winter and a Summer Session spent—*subsequently* to the Preliminary Examination—in following out such subjects as are prescribed in the Medical Council's tabular curriculum of March 26th, 1879.

(2) That such a year may be filled up by an apprenticeship or by a period of instruction in Mechanical Dentistry—always provided such apprenticeship or period of instruction be *subsequent* to passing the Preliminary Examination and in accordance with the prescribed curriculum.

(3) That the prescribed period of three years' instruction in Mechanical Dentistry, as specified in the curriculum, ought to be allowed to be taken at the option of the candidate, either *before* or *after* the Preliminary Examination. But if taken before the Preliminary Examination it should not be allowed to count as any portion of the four years' professional study, or among the professional studies subservient for filling up these four years. At the same time the certificate of such three years *extra mural* instruction should in itself be valid, whether counting as such professional study or not.

In reference to Clause 37 of the Dentists Act, and to the question of admitting to the Dentists' Register and to Examinations candidates whose apprenticeship terminated before January, 1880, this would appear capable of being more easily arranged were the *commencement* instead of the *termination* of such apprenticeships made the ground of admissibility. In this way the longer apprenticeship would not be placed at a disadvantage to the shorter one, supposing both to commence at the same time, and only the shorter one to terminate by 1880. The difficulty might be met by admitting to the Register and to Examination *sine curriculo* all those whose apprenticeship began before 1875. The *sine curriculo* Examinations, however, to be in all respects the same as for *curriculum* candidates with

the exception that no Preliminary Examination should be required.
Signed in name and by appointment of the Royal College,

Edinburgh, December 15th, 1881.

JAMES ROBERTSON,
Secretary.

(γ) Communication from the Faculty of Physicians and Surgeons of Glasgow :

26th December, 1881.

SIR,—Referring to your communication of 22nd November ultimo I am instructed to inform you that the Council of the Faculty are of opinion—

(1) That Dental Students should be engaged in acquiring professional knowledge for a period of four years subsequent to Registration.

(2) That of this period apprenticeship or employment in the work of Mechanical Dentistry may count for *one year*.

(3) That of the three years to be spent in acquiring a knowledge of Mechanical Dentistry the entire may be spent antecedent to Registration.

Yours truly,

ALEXANDER DUNCAN,
Secretary.

W. J. C. MILLER, Esq., B.A.

APPOINTMENTS.

HARRISON, WALTER, has been appointed Assistant House-Surgeon to the Dental Hospital of London.

HERN, W., L.D.S. Eng., has been appointed House-Surgeon to the Dental Hospital of London.

Correspondence.

[We do not hold ourselves responsible for the opinions expressed by our Correspondents.]

THE ENDOWMENT OF RESEARCH IN DENTISTRY.

To the Editor of the 'British Journal of Dental Science.'

SIR,—Mr. Whitehouse says he does not expect me to view this matter from a scientific or professional point of view. In what the scientific or professional points vary from my own I am at a loss to understand. I simply called attention to the fact that the matter had already been in the hands of Fellows of the Chemical Society, specially competent and strongly interested, and that ten times the amount Mr. Whitehouse proposed as a fund had already been spent without result. To offer such a sum as he names would be a farce, as I know it would not be sufficient to pay for

preliminary experiments only before the actual work could be even commenced.

There might perhaps be some sense in the proposal if a fund of at least a thousand pounds was forthcoming, and of this fund I am at any time prepared to contribute my share. As a commencement, I now offer twenty pounds towards this fund, if Mr. Whitehouse and forty-eight others will contribute an equal sum each, to make a preliminary fund for the purpose, and if this is not sufficient I offer another twenty pounds on the same terms. This may neither be a scientific nor a professional view of the matter, but it is a practical one. The question is whether Mr. Whitehouse and the others are prepared to follow my lead.

I will do more than either Mr. Whitehouse or any one else can in the matter by placing a record of my failures in the hands of any person or persons selected for the experiments, and will give any and every assistance in either time or special apparatus. Whether a perfect filling is or is not found is commercially a matter of total indifference to myself, and I am quite prepared to be superseded at any time. If Mr. Whitehouse can succeed in preparing better fillings than I do, I shall be pleased to give him every assistance, and if he will give me his views of the professional side of the matter I shall be prepared to take this if I do not at present do so. I am prepared to place both time, money, and experience at the service of any persons who may be selected. What more does he wish?

I am, &c.,

THOS. FLETCHER.

THE EXPANSION PLATE.

To the Editor of the 'British Journal of Dental Science.'

SIR,—I regret that a communication in your last number compels me reluctantly to add to the correspondence you kindly inserted certain facts assumed as known in my letter, which was not written for publication.

In 1869 Mr. Headridge took out a *patent* for "Improvements in Dentistry for Expanding the Upper and Lower Maxillary," claiming, broadly, as "new and never before used" (?), first, "dividing the base or plates into sections;" secondly, "giving these elasticity," &c., "by springs or other elastic substances." The specification, dated April 10th, No. 1101 (procurable for sixpence), it is unnecessary to further describe here.

It is a matter of indifference by what name anything is called, but not so that totally distinct things should be confounded together, wherefore I am as anxious as Mr. Headridge can be that the "Peter Headridge Plate" should not

be known as "Dr. Coffin's." The latter, as exhibited and discussed before the Congress, he may not be acquainted with. I wish again, and once for all, to admit that so far as I am aware Mr. Headridge, as my father's assistant, in 1866 first suggested and used steel wire, but unfortunately *true steel*, which he employed, is even less manageable than hard gold or platinum wire. An acquaintance with the properties of pianoforte wire led me to adopt in 1868 that remarkable form of steel with a carbon percentage approaching wrought iron, and a peculiar imperfect elasticity which has proved so useful. Its employment in other ways would obviously follow, but as Mr. Headridge now "claims" the use of steel wire for all regulating purposes; it is unfortunate he omitted to mention the fact in his otherwise very inclusive *patent* or to bring it before the profession.

Your, &c., WALTER H. COFFIN.

Junior Athenæum Club, Piccadilly;
January 9th, 1882.

To the Editor of the 'British Journal of Dental Science.'

SIR,—Having read the correspondence between Mr. Peter Headridge, L.D.S., and Mr. Walter H. Coffin, in your Journal of January 2, regarding the "Expansion Regulation Plate," I think it would have been much better had Mr. Coffin answered the question Mr. Headridge put to him, instead of putting us off with a mass of matter (to say the least) irrelevant to the subject. The question is: Does Dr. Coffin claim to be *the* inventor of the sectional expansion plate with steel springs? He gives the profession to understand in the paper he read before the International Medical Congress he does. So, would Mr. W. Coffin or his father kindly answer the question "Yes" or "No," so that the profession now and hereafter may know to whom they are indebted for the invention.

I am, &c.,

JOSEPH WILLIAMS, L.D.S.I.

Hollinwood House, Fallowfield,
Manchester; Jan. 7th, 1882.

ANOMALOUS EFFECTS OF NITROUS OXIDE.

To the Editor of the 'British Journal of Dental Science.'

SIR,—I notice an article in your valuable Journal of December 15th, 1881, on nitrous oxide gas. I may say that, having sold it in extensive quantities since its introduction, I have not as yet found a single fault, as regards the quantity or quality, of Messrs. Coxeter and Son's nitrous oxide gas.

I am, &c.,

JOHN JAMIESON.

192, High Street, Glasgow;
January 4, 1882.

British Journal of Dental Science.

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ON THE LIMITS TO THE CURABILITY OF DENTAL CARIES.*

By Dr. E. MAGITÔT, Paris.

DENTAL caries, as we all know, is a curable disease. But it is necessary first to clearly understand what we mean by cure in this connection.

By cure we mean (1) the complete and definite arrest of the various agencies which produce caries; (2) the return of the diseased organ to its normal employment, or, in other words, the restoration of its functional integrity.

It is, indeed, from these two points of view that we have nowadays to regard every problem dealing with the therapeutics of a definite lesion, which involves both the anatomical substance of an organ and its physiological function. And they are essentially applicable to dental caries, which, as we know, consists in a progressive destruction, in a loss of substance associated with a series of phenomena varying in character and intensity according to the actual phases of the destruction and the nature of the tissues attacked.

Now, this affection, which is as old as man himself—for even our prehistoric ancestors suffered from it†—must have led to various therapeutic experiments, dating from the very origin of science. Thus, authors of every age and every school have proposed methods of cure, consisting mainly in the employment of different medicaments calculated to sooth the pain, and certain other substances used as fillings to

* Read before Section XII of the International Medical Congress.

† The human remains of the Quaternary period contain a marked proportion of carious teeth.

replace the loss of substance. The application of these measures was necessarily limited to the initial stages of the disease, *i.e.* to the minority of cases, and to the most simple forms, anything beyond which was invariably reserved for that radical and final procedure, the extirpation of the diseased organ—extraction.

At the present day the conservative tendency of modern surgery is to protest against every mode of treatment which does not aim at rational therapeusis and physiological restoration, and to confine the old operation of extraction to the relatively rare cases in which there are serious complications, to relegate it in fact to the position of an exceptional procedure. Moreover, the modern methods of cure are of the greatest simplicity, they are capable of precise application, and they are certain in their effects. To every enlightened physician who regards them in this light their beauty will be apparent. It is not necessary for me to explain them here. I have already done that often enough.* My object to-day is to establish, by means of exact statistics, the limits of curability, and we shall see at what un hoped for results we have arrived.

The experiments I am about to describe were made in the full publicity of an open clinic. Thus they have been witnessed as well as assisted in by a certain number of young practitioners, who for some years past have shown themselves willing to help me in my practice and to follow my teaching. I shall mention in due course the important share which some of them have taken in these researches, but I must first give a brief *resumé* of the characters, the varied forms, and different aspects presented by the disease which is the subject of my statistical inquiry.

Now, we know that dental caries consists in a progressive destruction of the hard tissues of the dental organ, and that proceeding as it invariably does from the exterior to the interior of the crown, it invades and disorganises the successive layers it meets with, its course following, as a general rule, a vertical line representing the radius of the crown.

* See 'Traité de la Carie Dentaire,' Paris, 1867, and art. "Carie des Dents" Dictionnaire Encycl. des Sc. Med.

In this progress, which is modified by accidental circumstances in only a very secondary way, the disease may be divided into three successive stages or periods, the discrimination of which is of the very highest importance from the therapeutic standpoint, and of great interest from a statistical point of view.

1. *First stage*.—This simply includes the alteration in the layer of enamel; it marks the commencement of the lesion, and has for its deep boundary the superficial layer of dentine. The change is, as a rule, of an indolent character, and thus, in the majority of cases, occurs unnoticed; but when it has been diagnosed by a careful practitioner it may, in the vast majority of cases, be cured by simple resection by means of the file, or by immediate filling. These two operations, which have their special indications, correspond to one of the factors of curability, *i.e.* the isolation of the disease without any necessary preparatory treatment. The method is one, moreover, which has long been employed empirically, and has always given excellent results. Thus it is not for this elementary stage, any more than for the early grades of the next stage, that rules of rational therapeutics have been laid down and advocated. In this case modern research has simply confirmed the results of ancient practice.

2. *Second stage*.—This corresponds to all those degrees of caries which affect that part of the dentine included between the inner surface of enamel and the layer directly covering the pulp. From the very commencement of this period those therapeutic rules become necessary, which include, on the one hand, the relief of painful complications by appropriate modifying agencies, and, on the other, the restoration and maintenance of health by means of filling, *i.e.* definite and complete insulation. Now, the painful complications vary in a singular manner according to the greater or less depth to which the disease has penetrated. They are in some cases the result of simple irritation, in others they arise spontaneously, and the appropriate therapeutic agents belong to the general class of astringents—carbolic acid, creasote, tannin, and sometimes, also, small quantities of chloride of zinc, arsenious acid, &c.

The object of this treatment is to excite moderate exaggeration of the functions of the pulp, *i.e.* a molecular repair of the affected layers of dentine by the production of secondary dentine. This method, which is based on the rational employment of astringents or superficial escharotics, preceded by anæsthetic or narcotic dressings, prepares the layers of dentine for the final reception of a filling, after a sufficient degree of molecular repair.

3. *Third stage.*—This commences with penetration of the central cavity and laying bare of the pulp, and progresses until it reaches the furthest limits of the cavity and root canals. Its painful complications necessitate the use of many agents which I cannot now discuss, but the essential therapeutic object is the destruction of the pulp. This result is obtained in various ways, either by its direct removal or destruction by various mechanical procedures, or its destruction by caustic agents, and especially by arsenious acid. It is to this last procedure that I have almost invariably resorted in the cases I have collected. But the therapeutics of this condition are very complex, for they have to be regulated by very numerous and varied indications. Moreover, this last stage of caries witnesses the appearance of very common as well as of very severe complications.

I would hasten to say, however, that these complications are in themselves most usually curable. The most formidable of them, periostitis itself, is not beyond the resources of therapeutics when it does not occur in connection with a tooth the crown of which is completely destroyed. If it is simple, subacute, and has not extended to the adjacent tissues, it is amenable to caustics or local depletion; and even when acute and phlegmonous in character, treatment is not in my opinion contraindicated. If it has lapsed into a chronic, indolent, and localised condition, it can still be cured by the use of the drainage treatments of caries;* and when this method fails there still remains, as a last resource, the operation of replantation.† It is only in those relatively

* "Du Drainage Chirurgical dans des Applications à la Thérapeutique de la Carie Dentaire," 'Bulletin de Thérapeutique,' 30 Août, 1867.

† Cf. 'Gazette des Hôpitaux,' 1875, p. 35 *et seq.*; 'Bull. et Mém. de la Soc.

rare cases in which periostitis takes on a diffuse phlegmonous form involving the face and neighbouring regions, that extraction becomes strictly necessary, though this treatment is equally applicable where the tooth is so broken down that its restoration to physiological usefulness is altogether impossible, and its remains excite continuous or recurrent inflammation of the adjacent structures.

(To be continued.)

ON THE CAUSES AND TREATMENT OF TARTAR.*

By O. G. DUNCAN.

MR. PRESIDENT AND GENTLEMEN,—The subject I have chosen for my paper this evening is one concerning which I found great difficulty in gathering information, so you must please excuse its brevity and its defects. It is also one that I fear will not leave room for much discussion; but perhaps the few ideas I have brought together will be of interest to the new members of this Society, and if so the time will not have been spent in vain.

The deposit called “salivary calculus,” or, to use the usual term, “tartar,” is a collection of the earthy phosphates and other salts of the saliva, with epithelial scales and various extraneous matters entangled amongst them, found adhering to the various teeth.

A calculus is sometimes formed as a distinct concretion in one of the salivary glands or ducts; as a rule, when this is the case, like a calculus in the urinary bladder, there is a nucleus, which may be any foreign body that finds its way into the interior of the structure or organ. The two that I have seen were each about the size of a pea, and quite soft.

de Chirurgie,’ 1879; ‘Comptes Rendus de l’Acad. des Sciences,’ 6 Jan., 1879; cf. also David, ‘De la Greffe Dentaire’ Thèse de Paris, 1877, ‘Revue de Thérapentique,’ 1880, and ‘Transactions of International Medical Congress,’ vol. iii, 445.

* Read before the Students’ Society of the Dental Hospital of London.

This was because there was no resisting surface against which they could be formed, and because from the inconvenience to which they gave rise they were not left long enough to become hardened. One of them was taken from the duct of a sublingual gland, which it so blocked up as to occasion an enormous accumulation of saliva. If the calculus can be felt by the finger it can, of course, be removed by a pair of forceps, but if it is some distance within the duct, so that it can only be felt with a probe, an incision must be made in order to reach it.

The formation of a calculous deposit upon the teeth, in a greater or less degree, may be said to be almost universal; for although in persons of good health it is possible by care to remove it by brushing soon after it is deposited (so that the teeth are kept nearly free from it), still it is always being produced, and would be present if care were not used. We have seen that its source is the saliva, which is the secretion of the several salivary glands mixed with that of the small mucous glands; it is thin and watery, and contains a small quantity of animal matter, which is secreted by the sublingual gland and is called ptyalin. Ptyalin has a very peculiar property, it does not act upon proteid matters, nor upon fats, but if mixed with starch and kept at a moderate temperature it converts the starch into dextrose or grape sugar, which is easily soluble, and useful for nutriment, whilst starch *per se* is quite insoluble, and therefore innutritious. The other constituents of saliva besides the ptyalin are the phosphates of lime and magnesia, the chloride of potassium, chloride of sodium (or common salt), the carbonates of lime and magnesia, a small trace of sulphocyanate of potassium, and water. As regards the sulphocyanate of potassium it requires no great analysis to distinguish it; all that is necessary is to add a drop of the tincture of sesquichloride of iron to some saliva in a test tube when you see the characteristic blood-red tinge develop itself. Now, the salts are only thrown down when the saliva is alkaline, as an acid reaction entirely prevents their precipitation. Thus we rarely see much, if any, around the upper incisors, because here the albuminous matter which is

secreted from the mucous glands collects and ferments, and the resulting acidity serves to keep the salts in solution; whilst around the lower central incisors of the same patient we find them precipitated in abundance; this is because these teeth from their position are continually being bathed in alkaline saliva, so that no acidity can exist to keep them in solution.

Tartar collects in the largest quantity on the outer or buccal surface of the upper molars, just opposite the opening of Steno's duct—the duct leading from the parotid gland. This is more easily explained than in the case of the other situations where tartar collects, because the secretion from the parotid gland becomes turbid with crystals of carbonate of lime simply by exposure to the air, and this gland supplies more of the saliva than any other, as it is continually pouring out its secretion, whilst the sublingual and submaxillary glands only come into action at the thought of food or when required to act upon it when introduced into the mouth. The position also of the upper molars renders them less liable to friction, as they are protected by the cheek, whilst the deposit of tartar behind the lower incisors is greatly impeded by the continual action of the tongue.

Tartar exists in several varieties, which are named from variations in colour and density. The usual colour is whitish-yellow or buff, then we have the dark brown or black, and the green, but as far as I have tested them they do not differ chemically. The difference is due to the time occupied in deposition. If it is deposited quickly it will be of a light colour and soft, whilst, on the contrary, if slowly it will be hard and dark. It is capable, also, of being stained by any colouring matter frequently taken into the mouth, as in the case of great tobacco smokers; or in patients who while taking any of the preparations of iron drink tea just before or directly after, in which case the tartar will be stained perfectly black. The green variety, as a rule, is due to pus, which is formed by the irritation and inflammation caused by the tartar itself.

The way in which tartar is produced and the source from which it is derived have been stated and explained in

various ways, but there is no doubt that that which we have noticed is the true explanation. That it is produced from the saliva is thoroughly proved by the fact that by chemical analysis the saliva is found to hold in solution the very elements of which the substance we are considering is composed, and that it is found exactly opposite the openings of the various ducts in the largest quantities, becoming thinner and thinner the further it is formed away from them.

With the exception of caries and violence this deposit is the most destructive influence to which the teeth can be exposed, but the effect it produces upon the teeth is only indirect, acting through the gums and alveoli, which it so destroys as to deprive the teeth of their support. If we look at a tooth so lost we see that the tartar reaches to nearly the apex of the fang, and that the edge of this tartar nearest to where the margin of the gum was is very rough and sharp. The gum being in contact with this sharp rough margin becomes irritated and inflamed, the alveoli are absorbed, and the gums recede. As this process continues fresh salts are precipitated on the exposed surfaces of the teeth, for tartar seems to have a greater affinity for the dental tissues than for itself.

A temporary support is produced by a large quantity of tartar, which very often entirely joins two or three of the loosened teeth together. When this is the case they come away conjoined when you try to extract any one of them.

We have all noticed that though the lower central incisors are less attacked by caries than any other teeth, they are the ones that are first lost by becoming loose, owing to this collection of tartar. Tartar used to be thought by some to be a preventive of caries. It was argued that where you see it in a large amount you see hardly any signs of caries, while, on the contrary, a person with a small amount of tartar, or perhaps none at all, is very susceptible to caries; this is due to the fact that tartar can only exist when the mouth is in a state unfavorable to caries, namely, in an alkaline condition.

As the accumulation of this substance affects not only the

comfort and health of the mouth, but also the health of the whole system, the prevention of its deposition becomes of great importance, and there is no doubt that it may be obviated, or, at least, its immense accumulation lessened, by attending to the state of the stomach, and avoiding as much as possible any cause of irritation. But sometimes it is quite impossible to prevent its being deposited, as there are some people who are so susceptible to calculous deposits that no pains will stop its formation and it can only be kept down by constant attention, and by removing it while it is in a soft state. Very often when the tartar is of long duration the organic substances that are mixed with it decompose; this is the cause of the breath of these patients being so insufferable. Very often pus is seen oozing between the gums and teeth; this also makes the breath very offensive. If the patients rinse their mouths after each meal the collection of fats and other organic matter will be prevented, and thus, at any rate, they will keep their breath sweet. In advising patients as to the use of the tooth brush after scaling, it is always best to tell them not to use one with hairs that are very stiff, as they are liable after the relief to scrub so hard, as if to make up for lost time, or so that it shall not occur again, that when you see them some time afterwards the necks of the teeth are very much worn away. I therefore tell them to have one with hairs not too closely set and very elastic, so as to remove the tartar, &c., from between the teeth.

I have found that most of the lotions which are sold to render "the teeth of pearly whiteness" contain dilute mineral acids and perfume. They certainly do make the teeth white and remove the tartar, but it is only at the cost of the enamel prisms, and lastly of the teeth themselves. Sometimes, also, patients will say they find vinegar cleans the teeth; this, of course, is a vegetable acid, and has a similar action to that of the mineral acids, only in a minor degree. The proper method, of course, is to remove the tartar with instruments adapted for the purpose, called scalers, and shaped for removing it from the different situations. There is no necessity for having them so large as

some of the instruments are made. The best sets are Lord's and Howe's. The former's sickle scalers, as they are called from their shape, are very useful for removing the tartar from between the teeth. The scaling instruments should be highly tempered, and the edges kept sharp and clean. For the operation to be of benefit it must be performed thoroughly both on the external and internal surfaces as well as between the teeth, as the smallest particle left below the proper line of the gums will form a nucleus for further deposits, and thus keep the gums from recovering their normal position.

If the calculous deposit be present in such large quantities as to have loosened the teeth it is best to remove it at intervals of a few days, first removing that which is nearest to the apex of the fang. This will allow the gum to be again restored, and give the teeth a little chance of becoming tight; it will thus also permit of the remainder being removed without so much danger of removing the teeth with it. The tightening of them will be greatly assisted by frequently applying to them during the interval such astringents as tannic acid, alum, &c. After the tartar has been thoroughly removed it is a very good plan to nicely polish the teeth with pumice on a piece of cane, or for those that use the Dental engine with the wooden points sold for the purpose.

ON THE USE OF HÆMOSTATIC COLLODION AS AN OBTUNDER AND ANTISEPTIC.

By W. LLOYD POUNDALL.

FOR the past two or three months I have been in the habit of using the above preparation as an application to carious teeth where the cavity is too sensitive to bear stopping, although the pain is not severe enough to justify the use of arsenious acid. As a dressing I like it much better than the double one of carbolic acid with mastic solution over it.

In my practice I have found it more agreeable, quite as efficient, and less troublesome to remove. I may add that I have applied it in cavities in two molar teeth of my own with a good result. In cases where the cavity is close to the gum, and hæmorrhage takes place, I have also found it most efficacious in checking it. The form I use is the following:—Collodion 10 drachms, carbolic acid, tannic acid, of each 1 drachm, benzoic acid $\frac{1}{2}$ drachm. Mix.

2, Palmeira Terrace,
West Brighton.

THE CASTING OF ZINC DIES.

By J. HOWES BETTS.

I HAVE for some years used, as occasion may have required, the method advocated by Mr. Ward (p. 1130 of your last volume), but with a slight modification. I use the upper half of an old flask, previously well heated to expel any moisture which may be present on it; this answers the purpose as well as the gun-metal cone. There is no necessity to back it up with sand, as the lower edge can be sharpened with a file and pressed sufficiently deep into the sand. The zinc is now quickly poured in. I would recommend to the attention of Mr. Ward and others Bailey's casting flasks (*vide* S. S. White's catalogue); they are very useful and save time. The method of dipping the zinc in the lead ladle is, of course, an antiquated proceeding. It is better to use a (malleable) cast-iron dish into which the lead is poured. I wonder this article has not been offered for sale at the depôts; perhaps they will take a hint. I have been amused to see a workman trying to dip a hot zinc by holding it in his fingers. I take a piece of iron wire and bend it to the form of a staple; each point is now slightly turned. Catch the staple in the pliers and hold it in the molten zinc. This forms a ready means of lifting the zinc from the sand, and held in the pliers it is easily dipped in

the lead. I note Mr. Ward's method of leaving the sand in front of the teeth before pouring on the lead. Now, this may make a very convenient space in the counter-die for inserting the piece of metal to be swaged, but I should hardly like to adopt it for the second (or third, if used) die. The vacant space must tend to spread the teeth. I prefer before casting to build up the model (*pro tem.*) with plaster or wax, in such a form as best to strengthen the teeth.

Rochester ; January 11th, 1882.

THE NEW VULCANITE METAL STRENGTHENERS.

By GEORGE WARD.

THE idea of these fancy strengtheners is very ingenious and they are a great improvement on the old plan of pieces of plain metal, and if carefully worked in add greatly to the strength and look of cases. Now, with the uppers there is little, if any, fault to find, but with the lowers a most serious error has been made, or, perhaps, to write more justly, an oversight. It will be found, that while the inventor gave to all uppers the crescent or bow shape, so necessary, all the lowers are straight. This is a great defect, for all lowers, like uppers, should have had the crescent or bow shape, for the simple reason that it is mechanically impossible to bend a straight piece of metal, perforated or not, to the shape of any lower jaw, excepting in full sets, when they are not so much wanted. To easily bend these strengtheners to lowers *with teeth*, they should have had the crescent or bow shape. There is another defect, the metal is too brittle ; thus before using they should be annealed and not placed to get up colour in the acid while hot. Had these strengtheners been made of softer metal, and, as stated, the lowers made crescent or bow-shaped, they would have proved great acquisitions to artificial dentures. They should be *pressed* to the plaster in the reverse flask and then put on the rubber.

British Journal of Dental Science.

LONDON, FEBRUARY 1, 1882.

THE DENTISTS ACT AND ITS "FRIENDS."

WE wonder whether the Dental profession in England will ever be allowed to organise itself quietly, naturally, and without interference. We fear not. The English have not that spirit of patience, that gardener's spirit of the Dutch, which having sown the seed is content to forego its own activity, and to wait without restlessness or misgiving till the cotyledons push their way into the light of day. Things in England are seldom left to themselves in that way. We are too impatient; we want to see that our plant is developing as it should do, and we worry the seed in this way and that till it hardly knows whether it stands on its head or its heels, or, to speak more correctly, on its plumule or its radicle. Such is the history of most of our reforms. Look at our Dentists Act for instance. After long years of struggle and preparation the seed was at length safely deposited in the ground; no one expected it would be a quick grower; the most sanguine knew that he must wait decades before it would reach its full development. But the soil had hardly covered it before the head gardener declared that it had been badly planted, and tried to persuade everyone that it must be made to grow in one special direction before it could be safely left to itself. So far, in spite of Mr. Tomes's protests, the Dentists Act has been unmolested, but recently an attack has been made from another quarter. Professor Turner, of Edinburgh, as we mentioned in our last issue, is not content with the way in which the Act is being interpreted, he wishes that this and that part of its working should be more accurately defined, in a word, he

craves to pull up the seed and make it grow in accordance with his own preconceived ideas. We expected better things of the Scotch intellect, which, like the Dutch, is celebrated for garden craft. Unfortunately for the equilibrium of our metaphor, of the trio who have identified themselves with the restless criticism of the Dentists Act two—both curiously enough of the same name—hail from the land of cakes.

It is quite open to Professor Turner to argue that his criticisms apply not to the Dentists Act, but to the regulations under it issued by the Medical Council. But for the Dental student the regulations are practically the Act; they are the only means by which the Act influences him, and the introduction of changes into them will unsettle him quite as much as amendment of the Act itself. It has already been candidly admitted in these columns that there is much to be said in favour of Professor Turner's suggestion that students should be allowed to defer their preliminary examination till just before they begin their attendance on lectures, that is, till two years previous to the final examination, instead of four years as at present. Our own feeling is that the student ought to be allowed as much liberty as possible, so that he may allot his time and studies, or have them allotted for him, as best suits his own special temperament. But that is a "pious opinion" which, for the present, at any rate, we would rather see deliberately ignored by the Medical Council than made the pretext for introducing unsettling and perplexing changes into the administration of the Act before adequate time has been allowed for observing its operation.

It is perhaps rather illogical to criticise and to deprecate alteration in the same breath, but a regard for logic does not appear to be a necessary qualification for dealing with Dental or any other form of politics. We err in good company if we are illogical in suggesting certain improvements in the regulations without recommending their adoption. What appears to us to be anomalous in the present curriculum is that four years of study should be interposed between the preliminary and the final examination for the

Dental licence. In the case of the medical curriculum, which is of the same length as ours, there is an intermediate examination at the end of the second winter session, and before many years are over there will probably be another examination at the end of the first winter session. If such is found necessary to stimulate medical education, surely something of a similar nature would tend to encourage the Dental student, and when the proper time comes for revising the present regulations we hope that an intermediate examination dealing with the preliminary sciences, a knowledge of which is necessary to the Dental practitioner, will be introduced at the end of the second year. The present regulations encourage the student to let his brain lie fallow during the first two or three years of his curriculum, in the knowledge that all he wants will be gained by a final year of cramming. But this, as we have said before, we wish to be regarded as a "pious opinion," and not as an article of faith. Holding as we do that the Dental profession needs rest, we should be the last to place ourselves in the ranks of those who ceaselessly agitate for change.

A REPRINT of Mr. Alfred Coleman's 'Manual of Dental Surgery' is about to be published in America. It has been "thoroughly revised and adapted to the use of American students and practitioners" by Dr. T. C. Stellwagen, and illustrations of American instruments have been substituted "where they have proved superior to those of foreign make." This method of Americanising well-known English books is very objectionable, and it is surprising that reputable authors are found to lend themselves to it. It looks as if they wanted to ride into notoriety on other men's shoulders.

PROFESSOR WURTZ has recently been experimenting on a curious vegetable substance named papaine, obtained from the *Carica papaya*. It is said to possess properties very ana-

logous to those of pepsine, being able to liquefy two thousand times its weight of moist fibrin, changing it into peptone ; there is, therefore, a possibility that it may some day find an application as a pulp dressing.

EVERY one appears astonished at the four huge volumes of 'Medical Congress Transactions.' The cost of bringing them out, we hear, will make the expenses of the Congress exceed the subscriptions by nearly a thousand pounds. It is still hoped, however, that the guarantee fund will not have to be called up. The volumes of 'Transactions' are admirably got up, and, as far as we have seen, fairly free from errors. The proceedings of Section XII occupy 140 pages, as compared with 129 pages devoted to ophthalmology, 63 pages to diseases of the skin, 142 pages to diseases of the throat, 100 pages to diseases of the ear, and 82 pages to mental diseases—all in the third volume, so that the Dentists have no cause to grumble at the space allotted to them. We miss Mr. Saunders' final address, and we notice that all the speeches are much shorter than those which we published from the shorthand report. That is not, however, altogether a loss, as the official reports of the speeches being supplied by the speakers themselves may be assumed to contain the real gist of their remarks. Science would not suffer much, by the way, if talking were as much trouble as writing.

WHAT strikes us most in studying the 'Transactions' of our special section is the great excellence of the English, French, and German papers as compared with the American. The former are remarkable for a much truer grasp of the seriousness of scientific research ; they are the productions, to use a detestable phrase, of "earnest workers." And yet one of the shining lights amongst the American Dentists who visited the Congress, says that men who went there "with the expectation of being advanced scientifically, if all

their experience was the same as his was," must have been disappointed. "If one advanced any discovery," he goes on, "that was beyond their day or in advance of their recognition, they had in England a very smooth way of ignoring one. . . . They had some clinics there, but the best portion of their best men would not compare with American fourth-rate men. Their best finishings were bad, and how so intelligent a body as the English public could put up with them was a marvel. In surgery they had magnificent displays of old-fogyisms. They were as much behind as the Americans were thirty years ago." All that is delightfully *naïf* and amusing, but the greatest sin on the part of the English and French Dentists is that "they do not understand anything about molecular change."

LET us here say, once for all, that the long theorisings on molecular change, &c., with which Dr. Atkinson and his school take up so much of the time of the American Dental societies and the space of the American Dental journals, are about as futile as the disquisitions of the Schoolmen. We may be dense and stupid, but we cannot for the life of us see what bearing a passage like the following can have on the advancement of Dental or any other science. It is from an article on "Histology," by Dr. W. H. Atkinson, published in the last number of 'Johnston's Dental Miscellany.' After speaking of the three embryonal sheets as "the veritable producers of the lay out of the animal body," he continues: "In a vague and massive sense they are just this thing, but we must go further than that, deeper and finer, to enable us to grasp the steps of typal dominion in alternations of generations of prime ordeal (*sic*) preparatory bodies, through which steps all the organs have to finally pass, at the behest of type, to constitute a complete system or functioning organism." That kind of talk, when presented to Section XII of the Congress, was, as Dr. Atkinson complains, "smoothly ignored," if not something more.

THE long-expected second edition of Mr. C. S. Tomes' 'Manual of Dental Anatomy' has at length appeared. It is a possession of which the Dental profession may well be proud. No other specialty has had its local anatomy dealt with in such a thoroughly scientific spirit. We shall defer our review of the volume till our readers have had time to look into it. Reviews lose half their value by being read before the book they review.

THE most spirited of the American Dental journals—'Johnston's Miscellany'—has performed the happy despatch, and will appear no more. The firm in whose interests it has been published for the last eight years coalesced with the S. S. White Company some months ago, and the 'Miscellany' naturally found itself *de trop*. Its late editor will now be able to give point to one of his own aphorisms; "the introduction of labour-saving machinery," he tells us, "has set free the brains of men to bask at their own sweet will among the vast problems which are laid bare by the microscope." We wish him a pleasant and fruitful basking-time.

It will be remembered that after the Medical Congress two of the American Dental visitors sent round a circular, expressing their willingness to return from Paris, and give a week's instruction to any Dental practitioner who was willing to pay for it. The result of the undertaking is thus described in one of the teacher's own words. When in Paris, they heard that twenty-five gentlemen had promised "to join in the clinic, and that they contributed \$500 to pay expenses. So they went back to London and spent a week clinic-ing. They were as fine professional gentlemen as he (the speaker) ever met in his life. They attended the clinics from an early hour until late at night, and these gentlemen were from Scotland and England. They paid their money to learn. He (the speaker) enjoyed the seven days' clinic very much." No doubt.

The Dental Examiner.

[*Note.*—Dental materials and appliances intended for notice in the “Dental Examiner” should be sent to the Editor at 11, New Burlington Street, W. All preparations not generally known should be accompanied by a lucid description and a clear statement of their composition. The formulæ supplied *will not be published* unless a written permission is given by the maker.]

C. ASH & SONS’ DENTAL RUBBERS.

IT will very readily be understood that with the attention ever bestowed by them upon the requirements of the profession, Messrs. Ash & Sons are not behindhand in their manufacture of preparations of caoutchouc. No less than twenty-three distinct rubbers are sent out from their factory, and we have satisfied ourselves that none but the purest and the best materials are employed in their manufacture. Noxious ingredients form no part of their stock, and we are thoroughly convinced that the supposed irritation of the gums said to result from wearing certain coloured vulcanites is due simply to want of cleanliness on the part of patients, for we have never yet seen a mouth so inflamed that was any the better when a black denture had been substituted—that is, one containing no colouring matter at all. We know that the experience of others is opposed to this view, but we still regard want of cleanliness as the principal cause of irritation of the gums.

With each of Messrs. Ash’s rubbers are sent out directions with particulars as to the degree of heat recommended for hardening and the length of time needed for that process, but we shall have to disagree somewhat with these directions, and the statement in the form of a notice also contained in each packet, that *all* their dental rubbers can be vulcanised in one hour at 312° Fahrenheit is evidently a mistake, for Child’s G, the two rubbers called ordinary, and both the black vulcanites, require not only a higher temperature, but a

longer time to thoroughly bake them. This they have themselves recommended in their directions. It would, perhaps, be as well for us at once to state that Messrs. Ash advise forty-five minutes in getting up the heat, therefore, at least thirty minutes of that time can be added to the vulcanising period. In other words, those rubbers said to harden in seventy-five minutes at 310° have actually very little short of one hour and three quarters to do so.

Perhaps this would be as good a time as any other to give our opinions upon this part of the process. Where a sufficient quantity of water is put into the vulcaniser (and we recommend a quarter of a pint for every flask) very little is gained by getting up the heat slowly *below* 300° ; after that temperature is arrived at more care should be taken. We have tried slowly arriving at the hardening point, but excepting in the dry heat method and perhaps the superheated steam process, no perceptible benefit can accrue from all this care. The vulcaniser we generally use is furnished with a thermometer and a steam gauge, and is under fifteen minutes in arriving at the necessary temperature. When a workshop is at 70° , ten minutes with the usual gas and air burner is all the time needed; and it will readily be understood that if forty-five minutes are taken to do the same as recommended by Messrs. Ash, the greater part of that time is employed in hardening the rubber.

Different rubbers require different degrees of heat and a longer or a shorter duration, but our present experience points to the fact that you cannot harden rubber at a less temperature than 270° . The ordinary orange, red and brown rubbers manufactured by Messrs. Ash are thoroughly done in two hours and a half at 280° , and they are tough and of excellent colour. But, as we intend to devote some farther attention to slow vulcanising, we will not enter further into the subject now.

The dental rubbers manufactured by C. Ash & Sons are twenty-two in number, but as they have two blacks, the ordinary and the improved, their number may be called twenty-three. We have the greatest objection to articles being classified by names only, for as no less than five pinks

appear in this list, a number affixed to each would save many mistakes in ordering or in speaking of them. We have taken the list as supplied by Messrs. Ash and numbered them in rotation found there; thus Improved Pink will be No. 1, and Vela for artificial palates No. 22. In entering upon a description and an inquiry into the qualities of these various preparations, it will be more convenient to speak of the blacks and the darker rubbers first, and for these reasons: Every one is familiar with the blacks, and most persons prefer the darker colours, although much greater care should be taken in their manipulation. Ordinary black stands No. 18 on the list, and it is the strongest and the cheapest manufactured. Its cheapness is not simply owing to its price, but from its specific gravity being less a larger quantity goes to the pound. Thirty sheets five inches and half by two inches and half, gauged according to our standard, are required to make up that weight. The preparation supplied by Messrs. Ash is perfectly pure, and they recommend a temperature of 315° for two hours to harden it, the vulcaniser being forty-five minutes in getting up to 315° . This in our opinion is much too long a time; we have beautiful specimens, thoroughly done, that have only been one hour and a half at 315° , and only fifteen minutes in getting up the heat, so that from the time that the vulcaniser is lit to the time the work is taken out, only one hour and three quarters is demanded, a saving of one hour in all, while to our mind a better quality of material is secured.

The Improved or African black, which we number 18 *a*, requires the same time, but it is not so elastic nor so strong, and should never be vulcanised longer than one hour and a half. It runs twenty-seven sheets of the same size to the pound, and although prettier to look at, it cannot be compared in wear to the ordinary black. We have taken the greatest care to ascertain the strength of all these rubbers and we think the simple apparatus we have devised acts with perfect fairness in every case. All the slips are made one inch and a quarter in length, and three eighths of an inch in width. They are gauged to No 19 on the plate gauge, and are perfectly free from any flaw or crack, and all vulcanised

at the correct time as statèd. Each end is held firmly in a cramp, and one inch of the specimen is subjected to this test, one end being provided with a hook which takes the ring of the weight, and it will thus be found that the black ordinary rubber will stand (although it bends into a perfect semi-circle) six and three quarter pounds, finally tearing at a force of seven pounds, while the improved black is ripped asunder at a force of four pounds. We consider these experiments to be quite conclusive, and, when we have gone through the whole list of twenty-three of Messrs. Ash's rubbers, will form an excellent guide as to their service in the mouth, that is, so far as strength is concerned.

Special Article.

A BIRD'S-EYE VIEW OF THE ODONTOLOGICAL SOCIETY'S MUSEUM.

[FIRST ARTICLE.]

AT length we have to record the completion of a work that has been progressing slowly but surely for the last two years; viz. the verification, remounting, classifying and cataloguing of the specimens in the Odontological Society's Museum, and perhaps it may not be out of place if we devote a few words to some of the more important specimens in this interesting collection, as a guide to those who may have an opportunity of visiting the Museum, and for the information of those unable to do so.

The nucleus of the Museum of the Odontological Society was originally formed by the combination of specimens lent by Mr. J. Tomes, Mr. Cartwright, and Mr. Cattlin, and those that were presented to the Society at the usual meetings. They were classified, and a catalogue compiled and issued by Mr. C. S. Tomes in 1872. Since then a considerable number of new preparations have been added, indeed, in the original catalogue, something like 800 were published, against 2000 now exhibited in the cases.

The museum is, without doubt, of its kind, the finest in existence in Europe; it contains Dental specimens of a most interesting character, some of them being simply unique, and it would be well worth the while of any member running up to town to call in and view the collection.

It is our intention to run roughly through the catalogue, stopping at the more interesting objects.

In the "Development Series" we find specimens ranging from the age of foetal life to twenty-one years, the most interesting of which may be briefly mentioned. No. 69 is the superior maxilla of a child aged seven years, in spirit, showing the deciduous teeth in their respective places, and the sacs of the permanent teeth dissected out, with their crowns *in situ*. Nos. 73 to 78 are the maxillæ of children ranging from five years to twelve years; in these the external alveolar plate is removed, showing the developing teeth in position beneath the deciduous set. No. 80, "Histoire de la Dentition," is a series of twenty-four preparations, illustrating the dentition at ages from the sixth month of foetal life to the period of adult life. This series is well worth studying, as the specimens are in splendid condition and would amply repay the attention of all students.

Passing on to the Anatomical Series, the first specimen that attracts our attention is No. 162. It is a superior maxilla with a very contracted arch, measuring 20 mm. from bicuspid to bicuspid, against 35 mm., which may be taken as the measurement of the normal arch. In specimens 230 to 233, we have several inferior maxillæ with the external alveolar plate removed, showing the relative position of the inferior dental canal to the roots of the teeth; in these preparations it can be seen how easily an injury can be inflicted on that nerve, more especially if an elevator is used without great caution. Nos. 243—246 are inferior maxillæ of normal proportions, except at the symphysis, where they measure 36 mm. from the neck of the teeth to the base of the jaw. The next specimen worthy of notice is No. 253, in which the coronoid process on both sides is developed to a great length and curved backwards, the measurement from the centre of the sigmoid notch to the apex of the process being 29 mm. In this series are also found a great many preparations showing the distribution of the nerves and vessels of both superior and inferior maxillæ, all useful for the study of this part of the anatomy of the body; and besides these must be mentioned some very excellent dissections of the same part in spirit, which, when properly mounted, will constitute a very valuable addition to the museum.

We next come to the "Sections of Antra," kindly deposited by Mr. Cattlin. Most of these have been copied into Mr. Heath's 'Injuries and Diseases of the Jaws,' and are well known, but the examination of several of the specimens themselves is very interesting, and it is quite easy to understand how difficult it is to treat some cases of antral disease owing to the septa of bone rising up from the floor of the cavity, almost cutting the antrum into several smaller spaces. No. 20 is a series of wax casts of the cavity of the antrum at ages varying from two years to adult life.

We now turn to a section of the museum which may possibly be more interesting to the Dental surgeon as it shows specimens of cases with which we are more intimately connected; viz. "Abnormalities in the position of teeth." Starting with the *Dens Sapiientiæ*, in the first five specimens we find these teeth, with their mesio-coronal angle pressing against the neck of the second molar and causing more or less absorption; this position, no doubt, is the most frequent irregularity met with in connection with this tooth. In No. 6 the *Dens Sapiientiæ* is lying in a directly horizontal position on the right side of the lower jaw, the whole surface of the crown impinging on the posterior surface of the root of the second molar. There is a thick layer of alveolus above the tooth so that its presence could not be detected in the recent state. In the next specimen (No. 7) we find the *Dens Sapiientiæ* taking another course; indeed, on the right side it occupies the ascending ramus of the jaw, its crown appearing in the sigmoid notch, while on the left side it appears to have started later in this peculiar direction, for it has only travelled about two thirds up the ramus. Nos. 8 to 11 are also useful specimens, as they let us see that we may expect the crown of a wisdom tooth in any direction. No. 12 xx is a wax model of the side of the face of a patient in whom the right lower *Dens Sapiientiæ* had made its way through the skin at a point corresponding to the angle of the jaw, the neck of the tooth being firmly embraced by cicatricial tissue. This case occurred in the practice of the late Mr. Craigie about the year 1856. The patient was about twenty years of age, very nervous, and fearing the operation had delayed it until the crown of the tooth was fully through the cheek. A small oozing of saliva escaped from a fine aperture in the mucous membrane round the neck of the tooth and margin of the cheek aperture. After the removal of the tooth the opening in the cheek closed entirely without surgical aid. No. 12 xxx is a case of the crown of a right lower *Dens Sapiientiæ* impinging against the posterior root of

the second molar ; it was attended with a great deal of sup-puration, and at one time the jaws were quite closed. With great difficulty the second molar was removed and a few weeks afterwards the wisdom tooth was extracted, the patient making a very good recovery.

In the malposition of molars and bicuspidis very little can be found of great interest. No. 17 is the best specimen of transposition ; it shows the second bicuspid on the left side of the upper jaw, placed between the first and second molars. No. 18 is an upper model showing the crown of a molar appearing in the palate slightly to the right of the median line.—W. W.

Reports of Societies.

STUDENTS' SOCIETY OF THE DENTAL HOSPITAL OF LONDON.

ORDINARY MEETING, DECEMBER 12TH, 1881.

ROBERT HALL WOODHOUSE, Esq., M.R.C.S., L.D.S., President,
in the Chair.

THE minutes of the previous meeting were read and confirmed.

The following gentlemen were balloted for and elected members of the Society :—Messrs. Middleship, A. C. Woodhouse, A. J. Jones, McStay and Dr. Sternfeld. Mr. Ayres was proposed for membership.

Casual communications were brought forward by Messrs. H. Blackmore, J. S. Amooore, F. N. Pedley, and G. Hooper.

CASE OF PERFORATION OF THE UPPER LIP BY A TOOTH.

Mr. H. L. ALBERT presented to the Society's Museum a cast of a case in which a tooth had pierced the upper lip, and read the following notes of the case :

Emma S—, æt. 6, was admitted into St. George's Hospital for hare-lip. When three weeks old she was operated on the result being satisfactory. When twelve months of ag'

she cut her first tooth without the slightest trouble, dentition being completed normally.

At the time I saw her she had a hard shining mass, which had appeared on the left side of the upper lip. This proved to be a tooth, probably a permanent lateral; it was perfectly loose and surrounded by an eruption; there was a similar eruption on the lower lip. The parts around were excessively tender, in consequence of which it was difficult to obtain a satisfactory view of the condition of the mouth, but, to the best of my belief, the following teeth had been erupted:—The permanent centrals and laterals of both sides and the canine(permanent) of the left, but these were so much distorted in shape and irregular in position that it was not possible to state definitely what they were; some resembled supernumerary teeth. The temporary set had not been completely shed.

I extracted the tooth that had perforated the lip with the usual instrument, by removing it externally, and when I last saw the patient (two days subsequently) the wound was healing well.

CASE OF HÆMORRHAGE AFTER EXTRACTION.

Mr. C. ROBBINS, L.D.S., sent notes of a case of hæmorrhage after extraction of a lower molar arrested by a conical plug of cotton wool, the apex of which was steeped in Tinct. Ferri Perchlor., with compress bandage. The plug was removed on the second day. On a subsequent occasion when two roots were removed the sockets were immediately plugged, and no further hæmorrhage occurred.

A discussion on the treatment of hæmorrhage followed, in which the following gentlemen took part:—The President, Messrs. C. D. Davis, M.R.C.S., L.D.S., F. N. Pedley, M.R.C.S., L.D.S., Marcus Davis, L.D.S., J. S. Amoores L.D.S., G. D. Curnock, L.D.S., H. L. Albert, W. Harrison, A. Kirby, O. G. Duncan, and F. Gould.

The President then called on Mr. O. G. Duncan for his paper "On the Causes and Treatment of Tartar," which we publish in full in another page.

A discussion followed, in which the President, Messrs. M. Davis, L.D.S., J. S. Amoores, L.D.S., F. N. Pedley, M.R.C.S., L.D.S., G. D. Curnock, L.D.S., W. Hern, L.D.S., H. L. Albert, H. A. Mahomed, R. Derey, and F. Gould took part.

A vote of thanks was accorded to Mr. Duncan for his paper, and the meeting adjourned.

Literary Notices and Selections.

TREATMENT OF TEETH WITH DEAD OR DYING PULPS ALSO TREATMENT OF ALVEOLAR ABSCESS.

A PAPER on the above subject was recently read before the Illinois State Dental Society, by Dr. H. H. Townsend, of Pontiac, U.S., which deserves notice. In the treatment of alveolar abscess caused by a dead or dying pulp, the first thing to be done, says the writer, is naturally to remove the cause, but if soreness of the tooth has rendered manipulation of it very painful, it is best to merely open the pulp chamber to allow exit of all pent-up gases, and wait a day or two till the tenderness has subsided. Where devitalisation is necessary, the pulp being too sensitive to admit of its being immediately removed, Dr. Townsend applies not more than 1-250th part of a grain of arsenic combined with 1-32nd to 1-16th of a grain of morphia, with sufficient creasote to moisten the pellet of cotton, covering in all cases with a temporary filling of gutta percha. The way in which this high fraction of a grain is determined is not given, which is an unfortunate omission, considering the difficulty to be encountered in administering so small a quantity. The writer deprecates removing the pulp till the whole of it is entirely devitalised; this may take from a few hours to several weeks, the progress being ascertained from time to time by testing its sensibility. If the pulp is removed before this stage, it is a very painful operation to the patient, and liable to produce inflammation of the tissues beyond the foramen, which is very difficult to control. It is doubtful if most Dental practitioners will agree with this *in toto*. The removal of apical portions of the pulp is generally attended with some amount of pain, even after the dressing has been in for some time, but a healthy surface, or rather point is left behind, which in all but exceptional cases gives no further trouble. In cleaning out the pulp canals very

proper stress is laid on the necessity of being careful to avoid passing the nerve barb through the foramen so as not to injure the tissues beyond. Where the canal is large this accident easily happens, and great caution is therefore required. Having most carefully removed all the remains of the pulp, it is well not to fill the canals immediately; but to dress them with a little cotton wool moistened in some antiseptic solution, and wait till any irritation that may result from the severing of the pulp vessels, or from *débris* forced through the apical foramen, has passed away. For temporary fillings the common red gutta percha, with the addition of enough pumice stone to render it sufficiently hard to manipulate easily, answers the purpose and is less expensive than the white. The larger canals should be permanently filled with gutta percha rolled out to the desired size with a warm knife, and the smaller ones with a solution of gutta percha in chloroform; even if the smaller ones have to be enlarged in order to be filled, it is better to do so, as in many test cases where they had been left unfilled an offensive odour was detected after the removal of the temporary filling.

Among the various means resorted to for the purpose of preventing suppuration in the earlier stages of inflammation preceding alveolar abscess, are leeches applied to the gums, hot foot baths, and cathartics; where, however, the inflammatory symptoms are sufficiently severe to require constitutional treatment, aconite and belladonna will usually afford all the relief that can be derived from the use of cathartic medicines. The local remedies with which Dr. Townsend has obtained the best results are a mixture of creasote and iodine—the creasote of commerce probably containing oily carbolic acid as well, dissolved in an excess of iodine—and salicylic acid. Having cleared the fangs, the treatment is to bring the remedy in contact with the abscess sac, cauterising its entire surface to break it up and promote healthy granulations. This is accomplished either by injecting salicylic acid through the fistula where one exists with a syringe, or by pumping the creasote and iodine through the root canal where it is possible, using

cotton wound on a brooch for a piston. If the latter liquid goes through the foramen, a burning sensation will be experienced, but if the liquid does not the vapours of iodine will, if the cavity be perfectly sealed, unless the root is absolutely stopped. This was proved by the constant taste of iodine that was experienced in the mouth when a tooth so treated had the carious cavity in it perfectly sealed by a cement filling. Where no fistula exists, soreness sometimes results from stopping the tooth, and the patient should be directed to return at once or remove the temporary filling. The cases in which trouble is most likely to occur are nervous debilitated patients confined by indoor employments. The operator should be governed by the condition of the patient at the time of treatment whether it will be safe to seal up the cavity or not. The menstrual period in delicate ladies suffering from uterine diseases, and the first months of pregnancy, are conditions requiring extreme caution.

While admitting the truth of this last statement, it is surely somewhat improbable that the patient will either confide her uterine troubles to her Dentist or inform him as to the period of her catamenial flow.

The stain of iodine is a disadvantage in front teeth, but the objection can be overcome by adding a little aqua ammoniæ to the solution (1 drachm of aqua ammoniæ to 1 ounce of mixture), when the colour will disappear in about forty-eight hours.

In using this colourless solution of iodine surely Dr. Townsend is sacrificing utility to art or rather appearance. When aqua ammoniæ is added to a solution of iodine, the chemical reaction that takes place is rather complicated, but the nature of the solution is changed, and fresh compounds, namely, the iodide and iodate of ammonium are formed, neither of which is so powerful or efficacious as the original iodine. In those cases with large foramina, where chronic inflammation remains after the secretion of pus has been arrested, considerable benefit may be derived from the use of the tincture of hydrastis, callendula, or solution of sulphate of zinc and sulphate of morphia, of each five grains to the ounce.

Where poulticing is necessary a roasted fig applied to the

gum is sufficient. Dr. Townsend states that no abscessed tooth has been lost during the past eight years where an opportunity had been afforded him of carrying out the proper treatment, but at the same time he admits that he has been very fortunate, and does not pretend to say that he can treat every case of the disease successfully.

He instances the following as average cases of their treatment:—Case 1st, June, 1876.—Mrs. I., abscess right superior first molar. Tooth sore, face and gums swollen and very painful; had been under treatment for weeks. She had been told it would require from six weeks to three months to effect a cure, with doubt expressed as to the result. Applied rubber dam, carefully excavated the cavity, and found that an attempt had been made to extirpate the pulp through a small opening in the pulp chamber, which was so far from being successful that the buccal canals had scarcely been touched. Spent half a day of diligent labour in cleansing these canals; syringed, dried, and treated with the iodine and creasote, as before described, sealing up the cavity as usual. Painted the gums with aconite and iodine and dismissed the patient. In a few days the tooth was nearly well. I treated as before, and in three or four days filled the roots. In one week, filled the crown with gold. Last winter saw the case, and found it had given no trouble. Case 2nd, April, 1881.—Mrs. C., from an adjoining town, abscess of left inferior first molar, with pus discharging through fistula; also, pericementitis of right inferior first bicuspid. Was half a day cleansing these canals; treated and filled, temporarily, as described; came again in one week, and both teeth, apparently, perfectly well. Filled root in bicuspid, and changed cotton in molar, not having time, between trains, to fill the roots.

Cases are also quoted where local treatment was of no avail until constitutional remedies in the form of tonics were brought to bear, when favorable results ensued. In summing up the common causes of failures, Dr. Townsend says:

In conclusion, I will say that, aside from necrotic conditions, I think failures result principally from four causes,

viz.: imperfect cleansing of the pulp chambers and root canals, forcing foreign matter through the foramina, over-medication, or the too frequent application of caustic remedies, keeping up the secretion of pus; leaving cotton too long in the roots until it becomes offensive, causing irritation; and finally, by not paying sufficient attention to the general health of the patients.—*Ohio State Journal of Dental Science*, October 1881.

ULCERATION OF THE TONGUE.

THIS important affection formed the subject of a paper lately communicated to the Medical Society of London by Mr. JONATHAN HUTCHINSON, who said that it was his object to bring out prominently some of the more important features of ulceration of the tongue, with a view to discussion. He would, however, restrict his attention solely to the effects of chronic inflammatory action. He then proceeded to lay down lines for the differential diagnosis of syphilitic and non-syphilitic sores, and referred to the influences, local and general, which might compete with or complicate the "great mother of maladies" in the production of the lesions in question. He passed in review the various names given to the different pathological conditions, finding especial fault with the term "mucous patch," or "plaque muqueuse"; and challenged defence of the name "ichthyosis." He remarked that the conditions to which the term had been applied were simply exaggerated examples of chronic glossitis, and had no analogy to true ichthyosis linguæ. Ichthyosis linguæ might, however, exist as part of a general and congenital condition. So with the term psoriasis linguæ; it should only be used in cases in which it is associated with a general eruption. The forms of glossitis which occurred in the secondary stage of syphilis are as variable as are those of the skin eruptions. He then treated

of the abraded patch—a superficial ulcer; of the papillary patch, the bald patch, and the circinate patch. First among the causes of chronic glossitis must come, of course, syphilis, but the tongue is also apt to be irritated by certain articles of food, by alcohol, drugs, tobacco smoke, by rough teeth, or by the teeth filled with amalgam, effervescing waters taken in excess; also cheese and sugar were, in certain cases, of prejudicial influence. Among the most common results of the irritation were wasting of the papillæ and thickening of the basement membrane, denoted first by bald patches and subsequently by bluish white ones; with these might be seen fissures or ulcers as conditions of temporary aggravation. Mercury was well known as provocative of ulceration. All forms of disease of the tongue are much more frequent in men than in women; and with the exception of sores produced by dental irritation, well-marked examples of leucomata in women were rare; so also was cancer of the tongue rare with them. He drew a comparison between certain syphilitic patches and those of disseminated choroiditis. He then went on to speak of that peculiar condition which he termed the fern-frond pattern, and ended his address with a few remarks upon the diagnosis and treatment of cancer of the tongue, adverting to the manner in which chronic glossitis may serve as a precursor of malignant processes.

In the discussion which followed, Mr. MASON agreed with Mr. HUTCHINSON that many of these cases of white-patched tongue were not of syphilitic origin, while Mr. BRYANT was of opinion that syphilis was the chief cause of the inflammation which led to diseased patches, though not a few of the cases were marked by dyspeptic or some other troubles. He did not think that all cases of leucoma of the tongue were secondary to inflammation, but that they might come on slowly, and as new papillary growths. Some patches were associated with considerable changes in the deeper parts, and some showed many characteristics with epitheliomatous infiltration. In these old cases of atrophy and other diseases of the tongue no specific treatment did good. In suspicious cases he was in favour of early and energetic treatment.

Mr. HUTCHINSON said, in reply, that he wished to imply that most of the leucomatous patches came after inflammation, but that no doubt some appeared with the very smallest amount of inflammation. Red vulcanite, like any other irritant, might produce an initial inflammation. The ulcers occurring in association with indigestion constituted an important group, but he had not had time to refer to this. He did not differ much from Mr. Butlin, but objected to his application of the term “smooth tongue.” He referred to the value of Mr. Fairlie Clarke’s work upon the subject. He had seen but one case of epithelioma which took its origin in scar tissue; it was rather the chronic inflammatory irritation that was the starting-point of malignant disease.—*British Medical Journal*.

“THE DENTAL DIPLOMA TRADE.”

MR. JOHN O’DUFFY, L.D.S., Dublin, has written to the ‘Medical Press and Circular’ with reference to an article on the above subject which recently appeared in that journal. Without endorsing his views, we think them worthy of quotation.

“I do not attach so much importance,” he writes, “to the rescinding of the rule laid down by the College—namely, that after October, 1881, no Dentist should be admitted to examination who did not go through the regular curriculum. For there are, I am aware, many respectable men who were in the practice of Dentistry long antecedent to the passing of the Act, who, from one cause or another, were prevented from taking advantage of the two years’ grace, though it may have been their desire to have done so. That such should now be compelled to fall back upon the curriculum, after a long day of practice, as the only means of obtaining the *imprimatur* of the College, might be considered harsh, if not unjust. I think little of the relaxation of the rule when

it is designed to meet in a professional and friendly spirit the wishes of these persons, if in the attainment of the College diploma neither its reputation nor the efficiency and reputation of the profession suffer. But if it be rescinded and the doors of the College kept open for an indefinite period, other than the means hitherto adopted must be resorted to in order to prevent unworthy applicants from admission to examination. I have studied carefully the *modus operandi* by which admission has been obtained, and I am fully convinced that it is, and must ever be, defective, especially so in regard to the Dental profession, which is only yet in a state of transition. The recommendation of two surgeons and two Dentists of repute—the rule at present in operation—must be in many cases a deceptive passport. Such introductions have been, and can be, obtained from both surgeons and Dentists by many persons who have no claim, by practice or otherwise, to admittance to the examinations. A glaring instance of this kind occurred at one of the examinations. A person presented himself, armed with the necessary forms, went in, and passed, and I found after, as I suspected at the time, that this person was no other than a notorious quack doctor, which quackery he continued to practise until he was positively criminated.

"Taking this view, I venture to think that continuing the examinations cannot fairly be objected to, but proper precautions and stringent measures are absolutely necessary to ensure eligibility of candidates. To discontinue the examinations would simply mean to drive candidates from Dublin to Edinburgh or Glasgow. This would certainly be no advantage to the candidates or the public ; and it would be as certainly a disadvantage to our distinguished Irish institution.

"The great drawback, then, as I see it, is not in the continuance of the examinations beyond the period originally set down, but in the mode by which candidates are admitted. How then, it may be asked, should they be admitted ? Not on the recommendations of doctors or Dentists, but, as I would venture to point out, on the official authority of some recognised association or body interested in the dignity and well-being of the profession, and therefore bound to inquire

into the antecedents of the persons before recommending them."

In conclusion, Mr. O'Duffy suggests that there could be no better medium for recommending suitable persons to the College than the British Dental Association.

LARGE ODONTOME REMOVED FROM THE LOWER JAW.

AT a recent meeting of the Pathological Society, Mr. CHRISTOPHER HEATH read notes of a case in which he had removed a large odontome from the lower jaw. This was one of the rare tumours described by Broca as "odontomes odontoplastiques," and consisted of a mass of dentine studded with nodules of enamel. The mass weighed 315 grs., and measured $1\frac{1}{2}$ in. by $1\frac{1}{4}$ in. The patient was a young lady of eighteen, who had never been able to close her teeth properly, but otherwise was supposed to have gone through the first and second dentitions naturally. Last Christmas she had pain and uneasiness about the right angle of the lower jaw; and in April her father, a Dental Surgeon, extracted the second bicuspid tooth, there being no molars then present. A Dentist, who was frequently consulted, thought he detected an encysted tooth, and tried to extract it with the elevator. The result was an acute attack of periostitis. Profuse suppuration ensued, and on firm pressure near the angle pus could be forced up from the interior of the bone. Under treatment the inflammation subsided, and the patient went to the seaside, and on her return there was apparently some exposed bone, with greatly hypertrophied mucous membrane on each side. A month later, after imprudent bathing, sudden increase of pain and swelling took place, and she consulted Mr. Heath, who found great enlargement of the bone, with a fungus-like growth in the mouth, and apparently bare bone, the appearances closely

resembling those ordinarily found in a case of sarcoma of the jaw. An operation involving removal of a portion of the jaw was declined, and the swelling slowly diminished again. In September Mr. Heath undertook an operation for removal of the supposed sequestrum of bone, and after considerable trouble succeeded in elevating the mass described from its bed, since which the jaw has slowly contracted to its proper stage.—*Lancet*.

DEATH FOLLOWING ATTEMPTED EXTRACTION.

A MOST remarkable instance of death, under the hands of a Dentist, recently occurred at Marseilles. The circumstances of the case were as follows:—Gustavus Zach, a Swiss by birth, and about twenty-six years of age, called upon M. Koch, a Dentist, for relief from the pain of an offending molar. An attempt, that appears to have been only partially successful, was made to remove the diseased organ. The shock of the operation produced a fainting fit of so alarming a character that a physician was called. After the application of the usual restoratives the patient revived, and wished the operation continued. The physician and Dentist both attempted to dissuade him from this determination, but without avail, and preparations were accordingly made for the termination of the operation. His nervous apprehension was, however, so great that before the instrument could be introduced into his mouth he relapsed into a state of syncope, from which all efforts failed to revive him. As all attempts to again restore him to consciousness gave no promise of success, he was removed to the hospital, where he shortly drew his final breath. A post-mortem examination revealed the fact that death was the result of cerebral congestion, supposed to have been superinduced by the emotion attendant upon the operation. Some congestion of the lungs also existed, together with slight pleuritic adhesion, but this was only incidental, and had no immediate

influence in hastening his demise. According to a subsequent statement of the physician the patient exhibited an apoplectic tendency, to which he would eventually have succumbed, so that the unlucky star that guided him to the Dental office only precipitated an already predestined event.

—*Johnston's Dental Miscellany.*

THE NEW ZEALAND DENTAL ACT.

THE Dental Act which was passed by the New Zealand Parliament and which took effect from and after the first day of June, 1881, provides for the registration of Dentists qualified to practise in that country.

The qualifications for registration are, both for colonial and foreign Dentists, that they shall show that they are of good moral character and shall have been at the time of the passage of the Act *bonâ fide* engaged in the practice of Dentistry or Dental Surgery, either separately or in conjunction with the practice of medicine, surgery, or pharmacy; or that they shall show that they hold some such recognised certificate, diploma, membership, degree, license, letters, testimonial, or other title, status, or document, as may be recognised by the Board of Examiners (consisting of six persons appointed by the Senate of the University of New Zealand) as entitling the holder thereof to practise Dentistry or Dental Surgery in that colony, and as furnishing sufficient guarantee of the possession of the requisite knowledge and skill for the efficient practice of Dentistry or Dental Surgery. A fine of twenty pounds is imposed upon those practising without registration, and it is provided that they shall not be entitled to recover in any court fee or charge for the performance of any Dental operation.

The Act provides for an appeal from the Board of Examiners, when they have decided adversely to the claims of an applicant for registration, to the Governor in Council,

who may, upon sufficient evidence, order the board to recognise the certificate or qualification of the applicant.

A penalty of imprisonment for a term not exceeding twelve months is imposed upon any person who wilfully procures or attempts to procure registration under the Act by false or fraudulent representation.—*Dental Cosmos*.

VULCANITE AND CELLULOID COMBINED.

WHEN it is desirable to employ plain teeth placed on the natural gum in front partial pieces, and at the same time to take advantage of the clasping qualities of vulcanite, the objection to such a combination which lies in the unnatural appearance of the interdental spaces may be overcome by simply using a little celluloid in these spaces; select some of the right *pinkness*, run wax in the spaces, continuing it in conformity with the natural interdental gum of the adjoining teeth, allowing no wax on the palatal surface of the plate; invest in flask, separate, remove wax, and also cut away the vulcanite from between the teeth so as to form a "dove-tail" to retain the celluloid; heat, &c., as usual. If it is desired that the celluloid gum sink slightly *into* the natural membrane, this may be best produced by paring the original model so that the wax, rubber, and celluloid, will each, in turn, assumed the desired shape.—S. J. S. in *Dental Cosmos*.

DEATH UNDER CHLOROFORM.—A boy, nine years of age, was recently admitted to the Manchester Children's Hospital suffering from an abscess in the thigh and spinal disease, for which it was found necessary that he should undergo an operation. He was accordingly placed under the influence of chloroform, but though the operation was successfully performed, the patient never recovered consciousness, and died a quarter of an hour after.

EXTRACTS FROM 'VERNON GALBRAY; OR THE
EMPIRIC:'

WITH NOTES AND REFERENCES BY THE AUTHOR.*

(Continued from p. 96.)

THE author has been accused of having drawn an exaggerated picture in the extract that follows, but it must not be forgotten that immediately before the publication of 'Vernon Galbray' a series of Dental articles of a most offensive character appeared in some of our most influential daily papers. These articles assumed the form of editorial leaders, and professed to direct the public in Dental matters, but they were only calculated to mislead the unwary, and they filled the honorable portion of the profession with disgust. Upon the publication of 'Vernon Galbray' attention was directed to the practice and the persons assisting in these frauds upon the public, and the author had the satisfaction of eliciting from most of the newspaper proprietors an assurance that such paragraphs should not appear again unless received and paid for as advertisements. He is also aware that some dissatisfaction was expressed at the manner in which certain press-men were introduced, and one reviewer did not scruple to tell him that he could hardly expect his book to be well received by the press when he satirised the very class called upon to review it. The author no more desired to associate the honorable journalist with these pests of literary society than he did to class the honorable Dentist (no matter how humble his walk in life) with the empiric and charlatan.

In reviewing an admirable pamphlet entitled 'The Dental Profession' the 'Liverpool Porcupine' places the matter in a very clear light.

"This is a vigorous and well-timed protest against the disreputable practices of Dental quacks. The author clearly demonstrates that quackery is largely supported, if indeed it

* 'Vernon Galbray; or the Empiric.' E. T. Whitfield, 178, Strand. 1875.

be not nourished and cherished, by one section of the press, and that by no means the smallest section. The author says, 'It is, however, well known that certain newspapers, in consideration of the payment of a higher price, are in the habit of publishing what are commonly known as "puffs," that is, advertisements composed and printed in the language and form of editorial articles, with the object of giving the advertiser, or his goods, the apparent stamp of editorial approbation, and of driving customers into his hands.' There are papers which make a business of puffing, and, in a pecuniary sense, they thrive upon it. Nothing comes amiss to them. Every facility is given for the vendor of goods, or the pretender to skill, to write his own puffs. If he is not equal to that, the matter can be so arranged that the concocter or writer of the puff will be paid as well as the publisher."

THE MOUSE TRAP.

Mr. Tom Rutter's walk had none of his usual hang-dog slouch about it after his interview with Mr. Galbray. He walked erect and confident, making the most of his bushy head of hair and formidable pair of whiskers. It is true his coat could hardly be shabbier; still there was something in the roll of its front lapel that proved he was determined to show it off to the greatest advantage, and was well satisfied with himself.

He soon turned away from the broader streets, making for one leading out of a busy thoroughfare, and in a few minutes entered a small public-house, bearing the not altogether inappropriate sign of the "Mouse Trap."

Mrs. Forbes, the landlady, was behind the bar when he entered, and appeared to be in no way rejoiced at his visit.

"I tell you what it is, Mr. Rutter," she commenced, the moment he made his appearance, "here are two of your fellows monopolising the coffee-room and not spending sixpence an hour. You know I can't stand that. Beer and bagatelle won't go together. It must be something more profitable than that. They have now been playing for hard upon two hours, and what have they had? Two pints of fourpenny and a screw."

"Good Mrs. Forbes," the visitor replied, "calm that agitated brow—subdue the sparkle of that brilliant eye, and quietly hand me down the slate."

The landlady looked at her customer, first to see whether he was sober. The roll of his collar was not lost upon her, and she at

once conjectured that he was "in luck." She therefore handed him the slate as desired, and allowed her comely face to break into a smile.

"Eight pots of sixpenny and three Pickwicks. Two full goes of pineapple and three half goes. In all five shillings and eleven pence."

"That is correct, sir; but your friends had in on Monday in your name a bowl of 'Tom Noddy,' last night a 'once round of bishop,' and to-day two pints and a screw."

"Good Mrs. Forbes, your accounts are unimpeachable and your integrity established; but let me just hint to you, with a mildness I know you will appreciate, that 'my friends' must not come it *too* strong. Good Mrs. Forbes, make a note of that, and sum up the slate, my lady, while your daughter there, like a modern Hebe, mixes me a go of pineapple, with, and a dash of lemon."

As he spoke he took up the paper in a light airy manner, and skimmed its contents.

"The total is ten shillings and ten pence, the landlady answered, and her daughter proceeded to make the glass of rum punch.

"We will say eleven shillings, Madam, and with the present reviver eleven and six," Mr. Tom Rutter replied, laying down a sovereign, and having received his change and tasted his mixture, he proceeded to join his friends.

Why the dirty little apartment adjoining the bar should ever have been named a "Coffee Room" it is difficult to conjecture. The atmosphere of stale tobacco and bad spirits—in no way improved by the addition of sour beer—was certainly innocent of the aroma of coffee, a cup of which refreshing beverage did not enter its portals once in the twelvemonth. Still the room kept up its name, and the landlady would have felt deeply offended had any one proposed to alter it.

"Enter most liberal and most learned Æsculapius," one of the occupants of the coffee-room cried, as Rutter opened the door, glass in hand.

"Thou bringest with thee an odour of sanctity, which is refreshing to this weary child," the taller of the two added.

"And adornest thy countenance with a smile that argues well for thy present prosperity," the shorter continued.

"If you will stop that senseless jargon, I will join you," Rutter commenced, in no way mollified by the flattering reception he had received. "I can stand a good deal; but when a tavern score for three has always to be met by one, it does take the sweetness out of a fellow. Look you, Dick Straggles, I have just paid a crown for your entertainment, and shall expect some return."

"I have not a stiver to save me from hanging," the taller of the two answered, turning his pockets inside out.

"But what if I start you on a quarry—what if I scent the bird."

"Then cry 'Havoc, and let loose the dogs of war.'"

"Mr. Galbray wants to play a little game, he thinks he has shuffled the cards, and now asks me to deal. Do you understand?"

"I can't say I do," Dick Straggles replied, scratching his head.

"Then in plain English, my employer has set his mind upon making a fortune, and he can do nothing without the press—his talents require fostering, or you might say forcing. Now I have no objection whatever to his making the fortune, but I shall take good care that I benefit by it also. Read this—" and he put into his companion's hand one of the announcements already alluded to.

Dick Straggles read it with the air of a professional, then, looking at Rutter, nodded.

"Can you get it into any of the London papers?"

"Certainly, but not without the 'ADVT,'" Dick said.

"But the country?"

"Oh, that I can manage readily, but what say you, Mangle?" he added, addressing his antagonist in the game of bagatelle, who had sat sulkily on the end of the table.

"Oh, I am glad you have thought of recognising me. I did for the moment fancy I was no one. Mr. Tom Rutter, excuse me, but you have put a little too much starch into your collar this morning."

"Jack Mangle, you are a fool," Straggles cried.

The gentleman addressed started to his feet, but in a moment Rutter was between them, "This is too bad, too bad," he said, "here we are, clinging to the last plank, and yet you must quarrel over the vessel that heaves to in your hour of peril. Confound it all, gentlemen both, am I to pay your tavern scores and to be bullied into the bargain? Sit down, or by the immortal Jingo, I will leave you for ever."

Brave Mangle and his friend Straggles certainly could not be accused of nursing their wrath, for they mildly sat down in a moment, and Rutter standing at the head of the table explained to them what he wanted. Mangle then acknowledged that he had some power with the weeklies, and if a sum were paid down he had little doubt that he could get such an announcement in each paper for three months, but not for a shorter time, he was certain. Preliminaries were speedily arranged, upon the strength of which a bowl of "Tom Noddy" was ordered in. The compound was partly discussed, when suddenly Rutter happened to look out of the window, turned pale, and cried to his companions, "Get out your papers—put the bowl under the table—it's Galbray, as I'm a sinner."

The words were hardly out of his mouth when Vernon stepped into the room. He looked very red, and was prepared to commence an angry speech, but his secretary, who had seated himself at the

table with his back to the door, was speaking, and speaking loudly too.

"I'll tell you what it is, Straggles, you must talk to the editor—he must do it, for Mr. Galbray is a liberal man, and will pay handsomely for what he requires—" then turning round and seeing the Dutchman in the door-way, he pretended to perceive him for the first time, and jumping from his chair, ran with every evidence of satisfaction to meet him.

"This is very goot of you, Mr. Rutter," Vernon commenced, somewhat mollified by the warm reception his secretary gave him, "but you are hardly attending to my business, I think—"

"Welcome, most welcome, dear sir, to this society," the concocter of advertisements commenced, not heeding Mr. Galbray's opening speech. "Your visit is most opportune; yours was the last name upon our lips—but allow me—" and, extending his hand gracefully, he continued, "Mr. Richard Straggles (of the 'Flying Post') Mr. Vernon Galbray. Mr. John Mangle (of the 'Stepney Standard') Mr. Vernon Galbray. May this introduction be a fruitful source of pleasure and profit to both, and may the literary labours of those we employ never lead to discord; and—"

"Very goot, very goot, Mr. Tom Rutter, but I understood that your first visit was to make yourself fit for the society of gentlemen," and he pointed to his dependant's threadbare coat.

"Not so, my dear sir, not so; the habiliments are but the outward trappings of the man, his duty to his employer leads him first to consult *his* interest, and afterwards to look to his own adornment," and Rutter placed a chair at the table for his patron.

Galbray took the seat offered to him, but his position was not altogether a fortunate one, for the first thing he did upon sitting down was to put his foot underneath the table and overturn the bowl of punch hidden there; nor did it take him long to discover that Dick Straggles was, if possible, shabbier than Rutter, and Jack Mangle so dirty about the hands and nails, that it would have been a charity to take him out into the back yard and wash him thoroughly; but Vernon cared little who were his tools if he could but make them do his dirty work. Straggles, however, at once set to work to remove any unfavorable impression these observations might have occasioned.

"I have no doubt it will surprise you to find us partaking of punch at this hour of the day, but you must understand, sir, that we press-men are not guided by the rules and habits that regulate ordinary society. You doubtless retire to your virtuous couch at midnight—about the time when our work frequently begins. You breakfast on hot rolls, warm coffee, and devilled kidneys, while we poor mortals have to fire our jaded intellects with spirits, or steady our shattered nerves with S and B's."

Mr. Galbray listened to this harangue with but slight attention, which Jack Mangle perceiving, thought it a favorable opportunity to try his hand at making some impression upon their visitor.

"I have no doubt Mr. Galbray comes here upon business," he said, addressing his friend Rutter, "if so, we will retire."

"No, no, I would rather take you into the little business I have on hand. Do you think any goot is to be got out of advertisement?" Vernon remarked, in a cunning, insinuating tone of voice.

"Good to be got out of advertisement?" Mangle echoed, in a high key. "It is the very life of all that is successful. What would have become of the 'Neapolitan Hair Dye,' if it had not been for advertisements? I established it, sir. Where would 'Tomlin's Tonic Drops' have ended but for my well-planned and well-written announcements. Tell me, sir, what you want to bring before the British public, and, ere another moon has waned, its name shall be known throughout the length and breadth of the civilised world."

Mr. Galbray took up one of the slips that lay on the table, and handed it to the critic of the 'Stepney Standard.'

"This is good—I recognise our distinguished friend's handy work here. And let me tell you, sir," he continued, "the thing need not even be good, or the person clever, in order to make a success by advertisements. If a thing is good the more firmly will it take its hold, and if a person has anything original to put forward, the more likely it is to establish itself. But this is quite a secondary matter. Let me illustrate my meaning. Brown takes in his daily paper, and Brown sees the announcement of 'Jones' Resuscitator.' He reads the advertisement, but thinks no more about it. Brown again takes up his paper, and again sees 'Jones's Rususcitator.' He says to himself, 'I wonder whether Jones does really resuscitate;' but he puts it down again and forgets all about it. Over and over again he sees the same announcement, and begins at last to ask himself whether *he* requires resuscitating; he meets a friend, and questions him about Jones's nostrum. 'Well,' says his friend, 'I don't know much about it, but it must be a good thing, or it would never pay to spend so much money upon it.' He next sees 'Cure of pain in back by taking 'Jones's Resuscitator.' Brown discovers that he has a pain in his back, and makes up his mind just to try one bottle. He finds it by no means disagreeable (much depends on this, sir), and he finds also that it is handsomely got up, and Brown makes up his mind that he is wonderfully resuscitated, and recommends all his friends to go and do likewise. Now, where would Jones have been, I should like to know, without his advertisement?"

Galbray listened to all this with no small pleasure, Dick Straggles improving the occasion by pointing out how easily the Dental business could be worked; a little judicious outlay at the commencement, and good flaming announcements to bring the fishes into the

net. Once there, within the scope of Vernon's pleasing address, and the thing would be done.

The four sat consulting together for nearly an hour, each working for his own selfish ends, but all feeling that everything depended upon their keeping well together. Jack Mangle meanwhile not forgetting to impress upon Mr. Galbray the fact that the suburban and the greater part of the metropolitan press were under his thumb, a position which Vernon did not envy their possessing, if the thumb always remained in the dirty state in which it now presented itself.

(To be continued.)

Dental News.

APPOINTMENTS.

BRADSHAW, R. GILES, L.D.S.R.C.S. Eng., has been appointed Assistant Dental Surgeon to the National Dental Hospital.

DITCHAM, W. V., D.D.S., L.D.S. Glasg., has been appointed Dental Surgeon to the Royal Kent Dispensary.

HAMMOND, GURNELL, L.D.S.R.C.S. Eng., has been appointed Dental Surgeon to the National Dental Hospital, vice Oakley Coles, resigned.

VACANCY.

DENTAL HOSPITAL OF LONDON, Leicester Square.—Dental Surgeon. Applications by February 13th.

CONVERSAZIONE AT THE DENTAL HOSPITAL.

THE conversazione given on the 18th ult. by the Students' Society of the Dental Hospital of London was well attended and very successful. The hospital was tastefully decorated, and besides a programme of vocal and instrumental music there was a very complete display of Dental appliances to interest the visitors. Mr. Nehmer's new battery for the electric mallet and Mr. Coffin's models of Dental irregularities treated by his method attracted much attention, and altogether the soir  e must be pronounced a decided success.

Correspondence.

[We do not hold ourselves responsible for the opinions expressed by our Correspondents.]

ANOMALOUS EFFECTS OF NITROUS OXIDE GAS.

To the Editor of the 'British Journal of Dental Science.'

SIR,—I was surprised when I read Messrs. Coxeter's letter in your issue of January 2nd commenting so severely upon a former letter of mine on the above subject. What I then stated was never written with the slightest thought of "damaging" their business or casting either a DIRECT or INDIRECT imputation upon anything they supply; and this will be the more readily seen when I tell you, sir, I have never had any dealings with them. When I used the nitrous oxide gas made by Messrs. Coxeter it was obtained through a Dental dépôt.

I should be very sorry if what I wrote should in any way affect their business, it being the farthest thought in my mind when that letter was written, as it still is. This reply would have appeared in your issue of the 15th, but my attention was not called to this matter until too late. Hoping this explanation will reassure Messrs. Coxeter,

I am, &c.,

JOSEPH J. RITSON.

Beckenham; 14th January, 1882.

Obituary.

ADOLF ZSIGMONDY,

OF VIENNA.

By the death of Dr. Adolf Zsigmondy, of Vienna, the Dental profession on the Continent has lost one of its most widely respected members. Born at Pressburg in 1816, Zsigmondy studied medicine at the Universities of Pesth and Vienna, and graduated as doctor of medicine at the latter in 1840, obtaining three years later the surgical degree. From that time till 1853 he practised general surgery only, holding several public appointments, which afforded him a wide experience in operating. He had always taken a great interest in Dentistry, but the circumstance which eventually drew him more closely into connection with that specialty was an injury to the foot, which

made it difficult for him to visit patients at their own homes. He still, however, continued to practise occasionally as a general surgeon, and in 1857 he received an appointment at the large general hospital at Vienna, which gave him the surgical control of a hundred beds, and plentiful opportunities of operating. He was especially known for his success in plastic operations, and for his applications of the galvano-cautery, but he also took frequent part in the discussions at the Vienna scientific societies, and generally maintained a high reputation for wide scientific culture.

As a Dentist, Zsigmondy was distinguished for the remarkable conscientiousness and precision of his work. To quote the words of Dr. Pichler, who has written a careful memoir of the deceased, "it was sufficient to glance into the mouth of one of his patients to recognise his handiwork; it was essentially conservative, everything being preserved which it was possible to retain. The well-separated teeth filed perfectly smooth, the gold fillings of soft foil, worked in with a solidity which few operators arrive at, the amalgam fillings with sharply defined edges, and a smoothness and permanence, such as are only to be obtained with the most scrupulous care in excavating and filling—all bear his mark." Of late years, Zsigmondy became more and more conservative in practice. He gave up the Dental engine, used gold in very few cases, but he knew well what he was about. His treatment was very successful, and even his detractors had to acknowledge that all who trusted their mouths to him had the best reasons to be satisfied.

Dental practitioners, both in Germany and Austria, have good reasons to revere the name of Zsigmondy, for it was he as much as any one who, by his teaching, helped to place Dentistry, even when a new specialty, on a level with other branches of the healing art. It was, indeed, his constant aim to make his patients understand that the services rendered by the Dentist are an essential part of medical treatment, and as such deserve full recognition and reward. As a teacher of Dental students, Zsigmondy was not long actively engaged, but he received the appointment of privat-docent of Dentistry in the year 1868, and his efforts were highly appreciated by those who had the privilege of attending his class. In conclusion, it may be said that, in his own person, he placed before all who came into contact with him a high ideal of professional character. To a wide scientific culture, and a love for every branch of natural history, he added that practical conscientiousness and precision, without which the highest mental gifts must fail to be useful in any branch of this medical calling.

To Correspondents.

1. Communications intended for insertion in the ensuing number must be forwarded to the Editor, at the Office, 11, New Burlington Street, London, W. by the 8th and 23rd of the month, and must be duly authenticated by the name and address of the writer.
2. We cannot undertake to return communications unless the necessary postage stamps are forwarded.
3. It is earnestly requested of our correspondents that their communications be written on one side of the sheet only; and we also beg to call particular attention to the importance of a carefully-penned signature and address.
4. All communications relative to subscriptions and advertisements are to be addressed to the Publishers, Messrs. J. and A. Churchill, 11, New Burlington Street, London, W.
5. The Journal will be supplied direct from the office on PREPAYMENT of subscriptions as under:

Twelve Months (post free) 14s. 0d.

Post-office Orders to be made payable at the Regent Street Office, to J. and A. Churchill, 11, New Burlington Street, W. A single number sent on receipt of seven (penny) stamps.

ANSWERS TO CORRESPONDENTS.

- A. SMYTH.—We have already said as much as we think necessary of the preparation you commend.
- G. WALKER.—We are much obliged for your letter, and shall be grateful to all who will help us to maintain the *scientific* function of this Journal.
- “ASMODEUS.”—That would never do. It would set the profession by the ears.

Communications have been received from Messrs. G. Walkør (London), T. B. Barnby (Bradford), J. J. Ritson (Beckenham), Hon. Secs. of Odontological Society, W. L. Poundall (West Brighton), Alex. Smyth (Glasgow), Hon. Secs. of Dental Hospital Students' Society, J. Howes Betts (Rochester), W. V. Ditcham (Blackheath).

BOOKS AND PAPERS RECEIVED.

‘Manual of Dental Anatomy,’ by C. S. Tomes. ‘Dental Cosmos.’ ‘Missouri Dental Journal.’ ‘Deutsche Vierteljahrsschrift für Zahnheilkunde.’ ‘Johnston’s Dental Miscellany.’ ‘Correspondenz-Blatt für Zahnärzte.’ ‘Lancet.’ ‘British Medical Journal.’ ‘Medical Times and Gazette.’ ‘Pharmaceutical Journal.’ ‘Chemist and Druggist.’ ‘L’Odontologia.’ ‘Journal of the British Dental Association.’ ‘L’Odontologie.’ ‘Le Progrès Dentaire.’ ‘El Progreso Dental.’ ‘Ohio State Journal of Dental Science.’

NOTICE.—We desire that it may be clearly understood that our pages are open to all for free expression of their views on matters connected with our profession. We only ask for terseness of expression and MODERATION IN TONE.

When otherwise unobjectionable, difference of political or other opinion will never be regarded by the Editor as a disqualification for the admission of any communication to the pages of the BRITISH JOURNAL OF DENTAL SCIENCE.

British Journal of Dental Science.

No. 338. LONDON, FEBRUARY 15, 1882. Vol. XXV.

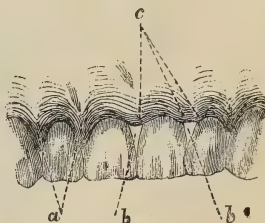
THE TREATMENT OF PYORRHŒA ALVEOLARIS, OR INFECTIOUS ALVEOLITIS.*

By ADOLPH WITZEL, Essen, Germany.

GENTLEMEN,—The subject of my paper is a disease of the dental sockets which it has been customary to name alveolar blennorrhœa. Hitherto so little has been positively known of the essential character of this peculiar affection that it will surprise no one that we are in the dark both as to its causes and its treatment.

If we follow step by step the clinical phenomena of the disease, which so far I have only observed in well-developed jaws with sound teeth, we notice the following essential appearances:—At some spot in the row of permanent teeth, one of the processes of gum, which is normally found as firm tissue filling up the space between the necks of the teeth, is seen to be somewhat retracted and everted as it were. If the affection, which is a serious one, whatever variety of tooth it attacks, begins between two incisors, we find on examination of the mouth an appearance somewhat like that depicted in fig. 1. The space between the central and lateral incisor is filled by a healthy process of gum tissue *a*; at *b*, on the other hand, we see the first sign of commencing alveolitis, namely, dis-

FIG. 1.

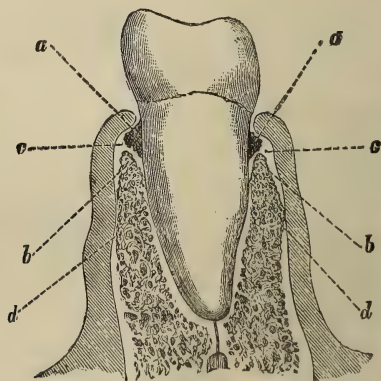


* A paper read before the annual meeting of the Dental Association of Germany at Heidelberg, on August 1st, 1881, and published in the 'Vierteljahrsschrift für Zahnheilkunde.' We have to express our obligations to Herr Witzel for the woodcuts.

appearance of the process of gum, and in consequence a free space between the necks of the teeth. This disappearance of the process of gum between the teeth is the first pathognomonic symptom of the disease under discussion. The gum itself at first presents no inflammatory swelling; its colour is normal, and all that we find is a looseness of the ring of gum which normally surrounds the neck of the tooth like a sphincter.

If, now, we pass a fine excavator under the everted margin of gum, we find, with few exceptions, on the approximal surfaces of the necks of the teeth at *c c*, fig. 1, small acuminate deposits of concretion of a greenish-black colour, by which the adjacent margin of gum has been thrown into a state of chronic inflammation. Later on we find the gum somewhat lifted up from the neck of the tooth by these deposits, so as to form a sort of *pocket*, from which a *dirty purulent secretion exudes on pressure* (Pyorrhœa). On probing this pocket we find the border of alveolus between the necks of the teeth rough and denuded of periosteum, and from an examination of jaws which have been macerated, it is evident that even at this early stage of alveolitis the affected alveolar border has already lost its covering lamella and has become quite porous.

FIG. 2.



In fig. 2 I have shown these appearances diagrammatically. At *a a* we see the rough concretions on the neck of the

tooth, which have been deposited close to the alveolar border, and have separated the gum from the neck of the tooth. In the pocket thus formed (*c c*) the products of decomposition collect, the periosteum of the alveolar border is destroyed, and the edges of the latter (*b b*) undergo necrosis. It is further to be observed that the submucous connection between the gum and the periosteum of the alveolus is also, as a rule, destroyed as far as *d d*, so that the socket becomes necrosed on both sides at once.

At the very commencement of the disease the teeth belonging to the sockets affected by it appear *somewhat loosened*; and the further the process advances the looser they become, until they are at length completely extruded by the granulation tissue which grows from the enlarged cancelli of the diseased portions of bone.

During this process, which mostly runs a chronic course, the *periosteum of the root of the tooth* becomes disintegrated from the neck of the tooth to its very apex; but, like the gum itself, it takes but little part in the formation of pus, usually so copiously poured out in this disease. The *source* of the *pus* is rather to be looked for in the medullary substance of the ring of bone surrounding the neck of the tooth, for if the alveolus be examined at the moment of extraction, and before it has become filled with blood, the diseased portion of bone will be seen covered with pus and soft granulations. I have frequently found this soft connective-tissue neoplasm very abundantly developed on the interalveolar walls of the upper and lower molars, where it occurs in the form of lobules on the more or less disintegrated portions of alveolus separating the fangs. It is also sometimes found after extraction on the tooth between its roots (see fig. 3; *a, a*, deposits of concretion; *b* connective-tissue granulations between the fangs).

FIG. 3.



It is not until the process has penetrated to the bottom of the alveolus and the tooth is quite loose that we find this granulation tissue also occupying the base of the socket. In this case the growth of granulations from the medullary

tissue at the root of the tooth leads to a breaking down of the cementum, as a result of which the apex of the tooth is seen to be quite rough. I have not yet observed the total disintegration of the layer of cementum which Magitôt has described as characteristic of the disease.

As a rule, the patients will not allow you to extract the affected teeth until they have become quite loose; but if you should ever chance to extract a tooth at the early stage of the disease, you will find the soft disorganisation of the dental periosteum confined to the neck of the tooth. The remaining portions of it are velvet-like and loosened, and present a brilliant vascular injection increasing towards the root, and associated with small nodules and lobular granulations. I have not yet examined these growths for nests of micrococci, but I have no doubt that they are to be found, not only in the granulations, but also in the infected medullary tissue of the interalveolar partition. In the pus which may be obtained from the affected alveoli by pressing the gum we observe under the microscope a countless number of micrococci and bacteria, which doubtless find in the pockets of gum tissue *the most favorable conditions for their continuous development*.

The pulp appears to me to be involved in this affection only secondarily. The earliest changes in it bear some resemblance to the net-like atrophy described by Wedl. At first the larger vessels are seen to be congested, and there are deposits of lime salts in the pulp tissue. It is not until later, when the disorganisation of the alveolus has reached the end of the fang, that the pulp of the *now entirely loosened tooth* breaks down into a fetid fluid mass. In single cases, however, I have found pulps inflamed and gangrenous, even before the teeth had become fully loosened. This has chiefly occurred in the case of younger patients, in whom the disease ran an acute and not a chronic course; the teeth became loose a few weeks after they were first attacked, they grew sensitive on mastication and to heat, and generally had to be extracted from the affected sockets after they had caused the patient several sleepless nights.*

* The above clinical observation led me in a few cases of alveolitis to try

I was very much struck in some of these cases with the fearful pains which the patients complained of, as well as with the phenomena with which the suffering were associated. I have repeatedly observed high fever, rigors, hard phlegmonous swelling of the side of the face and sudden formation of abscess under the gum. When teeth are attacked in this way their periosteum becomes in great part disintegrated and covered by a fetid ichor, which continues to pour itself out of the abscess after the extraction of the teeth, which, I may add, are usually free from caries.*

The causes of this affection, the first symptoms of which are invariably overlooked by the patient, and were until lately too little regarded by the Dentist, are still more or less

opening the pulp cavity, disinfecting it, and subsequently filling it antiseptically. The experiment was not invariably successful, still a certain number of teeth treated in this way have for years lost all sensitiveness on mastication, and have not apparently become looser. In one case, a lower molar, the pulp cavity of which I opened successfully five years ago, is still firm, while all the other teeth have been either extracted, or are more or less loose in their sockets. But we shall not be able to come to any conclusion as to whether this treatment is advisable or not till more numerous experiments have been made in respect to the opening up and antiseptic filling of the roots. I consider that perforation of the pulp is not indicated in the case of a firmly-planted tooth until gangrene of the pulp is proved with certainty to exist.

* In the treatment of infectious alveolitis certain precautions seem to me to be called for, for not only can the process be conveyed from alveolus to alveolus by infected instruments which have been used for the purpose of cleansing the pockets of gum tissue, but, as will be seen from the following case, the putrefactive products of the alveoli are not without danger to the operator, if they come in contact with such slight wounds as the Dentist is liable to have on his fingers. Some years ago M. Montegel, a Dentist of Coire, treated a lady with acute alveolar pyorrhœa. In the course of examining and pressing the alveoli he infected a small skin wound near the root of the nail of the index finger. Twenty-four hours later his hand swelled up considerably. On the third day the lymphatics of his arm as far as the armpit were severely affected, and on the sixth day a deep-seated abscess appeared in the neighbourhood of the wrist. The whole course which this affection of the hand ran clearly proved infection of the wound by the alveolar secretion. M. van Geldern has also recorded a similar case. One ought, therefore, before one examines a patient with alveolar pyorrhœa, to cleanse the margins of the gum, which are usually covered with matter, with an alcoholic solution of soap, and after the treatment to use the same to the instruments and ends of the fingers.

unknown. Neglect of the teeth encourages it, and also, more particularly, the deposit of concretions on the necks of the teeth, by means of which the gum is lifted up from them.

The usual deposits of tartar with which we are all familiar are firmly attached to the neck of the tooth *upon* the margin of the gum, which is gradually mechanically pressed down from the neck of the tooth towards the fang by the gradual increase of the chalky concretion; the alveolus and its covering disappear, but simply from atrophy through pressure. But in this process, which is one of very slow progress, the connection between the gum and the periosteum of the jaw and the alveoli remains unbroken; it is a localised process, as may be observed in those cases in which it so frequently occurs in connection with incrustations of tartar on the lower incisors.

The greenish-black concretions, on the other hand, always form on the neck of the tooth *beneath* the gum close to the inter-alveolar wall, and by their gradual growth destroy the connection of the gum with the periosteum of the jaw and teeth.

I have hitherto been unable to find any definite point of contact between alveolitis and constitutional affections; it appears to me, however, that prolonged residence in damp dwellings favours its occurrence. Other causes are to be found in the various affections of the gum, which lead to a collection of irritating substances between the gum and neck of the teeth. Among the sailors of Heligoland, not one of whom has probably ever used a tooth-brush, almost two thirds lose their teeth at a very early age from alveolar pyorrhœa, which, however, in this case is always associated with spongy softening of the gum.

As a general rule, then, it may be accepted that any affection of the gum that arises from want of cleanliness may in the end give rise to a considerable softening and loosening of the gum from the neck of the tooth, and so prove an indirect factor in the causation of alveolar pyorrhœa. Nevertheless, it is necessary to insist upon the different course run by simple affections of the gum as compared with that of infectious alveolitis. Simple gin-

givitis and ulcerative stomatitis can both be easily and thoroughly cured as soon as the necks of the teeth are cleansed of mucus and tartar, the ulcerous edges of gum cauterised with chloride of zinc or carbolic acid, and the teeth and gum carefully cleansed by the patient with a soft brush and carbolised spirit. In these cases teeth often become considerably loosened, as we have sometimes seen in cases of ulcerative stomatitis, without being lost; but here, as in the case of all affections of the gum, the loosening is invariably a secondary result, and as soon as the gum grows healthy the teeth again become fast in their sockets.

Now, if the disease we are discussing were a simple blennorrhœa of the gum, it could, like other gingival affections, be easily cured without loss of the teeth. This, however, as I have learnt from my own experience, is not the case, and on this ground it is necessary to draw a distinction between the disease of the alveoli which is the subject of this paper and diseases of the gum, though I am free to admit that neglect to cleanse the gum often enough gives rise to the former affection.

We have, in fact, to deal neither with an ulceration of the gum nor with a primary inflammation of the dental periosteum, but with a molecular necrosis of the alveoli, or caries of the dental sockets, produced by septic irritation of the medulla of the bone.

The affection is not to be confounded with senile atrophy of the alveoli. On the contrary, it occurs most frequently in strong and healthy persons in middle life, and, according to my observations, seldom, I might almost say never, attacks carious teeth with diseased pulps. Senile atrophy consists in a steady disappearance of the socket, by means of which the fangs of the teeth are gradually laid bare; there is no necrosis of the alveolar margin, and the gum remains firmly attached to the latter and to the periosteum of the jaw. In alveolar pyorrhœa, on the other hand, there is, as already mentioned, a loosening of the gum from the outer border of the alveolus, by means of which the periosteum of the latter becomes exposed and destroyed by colonies of micrococci,

while the margin of bone, thus robbed of its covering, is infected and finally becomes softened by caries.

Alveolitis is a disease which—exactly as we might expect from the cause that gives rise to it—attacks first by preference the *strong inter-alveolar partition*, and it is a distinct error of observation to maintain that it chiefly affects the labial lamella of the alveoli, or that it is more frequently found in connection with teeth with a single fang than with the molars or bicuspid. I have often seen the affection occurring in young persons, between the ages of twenty-five and thirty years, where senile atrophy of the alveolar process was certainly quite out of the question, and I have seen it attacking the most different kinds of teeth. I have observed its commencement both on the upper and lower wisdom teeth, and also on the bicuspid and incisors; but it invariably happened that the starting-point of the disease was in *one* inter-alveolar partition.

An affection resembling alveolar pyorrhœa is observed in the eruption of the lower wisdom teeth, if they happen to be dislocated backwards and remain beneath the gum for a prolonged period. In this case also putrefactive products collect between the neck of the tooth and the gum covering it; and the mechanical injury to which the swollen mucous fold at the angle of the jaw is exposed, together with the septic irritant which is conducted from the pocket of the gum to the alveolar border, lead to those violent inflammations of the angle of the jaw which we know so well in practice.

The cause of this inflammation is thus similar to that which produces alveolar pyorrhœa, but the course of the two affections is utterly different. If the wisdom tooth is extracted before it has led to extensive inflammation of the jaw-bone, the affected alveolus heals up, and the loosened neighbouring tooth, the socket of which has been more or less involved in the inflammation and undergone some degree of softening, again becomes fast, and that even though the inflammation has run a chronic course, and the misplaced tooth is not removed for years.

In these cases, if we examine the enlarged alveolus and the

periosteum of the root of the wisdom tooth, we find almost the identical changes which are observed in teeth with commencing alveolar pyorrhœa; and yet the inflammatory process that occurs in the case of eruption of a wisdom tooth remains confined to the one alveolus, and the adjacent tooth continues firm, while infectious alveolitis speedily attacks the contiguous alveoli, and causes the loss of the teeth they contain.

I have dwelt on this comparison with the view of showing that in alveolar pyorrhœa there is a certain something co-operating, either a *predisposition* on the part of the alveoli, or, as to me appears more probable, a virus, of the nature of which we are as yet ignorant. It is true that I have not hitherto made any attempts to convey the affection from one individual to another by transferring the pus from a diseased alveolus to a healthy one. The fact, however, that it usually begins in the neighbourhood of one tooth and never attacks a whole row of teeth at once, and that its extension is best prevented either by treating the diseased alveolus antiseptically as soon as possible or by extracting the tooth, proves that we have to deal with a *local contagium*.

(To be continued.)

ON THE LIMITS TO THE CURABILITY OF DENTAL CARIES.*

By Dr. E. MAGITOT, Paris.

(Concluded from page 109.)

I HAVE already briefly indicated the different stages of the affection known as Dental caries, and at the same time have determined the limits of its curability. The statistics that I am about to lay before you commence with the year 1874, and the results are derived from the whole twelve

* Read before Section XII of the International Medical Congress.

months of that year. During that period all the cases of caries which chanced to occur in my practice, without exception, were carefully treated and registered in uniform statistical tables. These tables record all the many conditions relating to the sex and age of the patient, the seat of the lesion, the stage of change, the therapeutic means employed, the duration of the treatment, and, lastly, the nature and particulars of the final filling. Lastly, the cases considered to be beyond all possible attempts at cure have been registered in a separate column—that column shows the percentage of extractions.*

The cases of Dental caries observed and treated during the year 1874 exceeded two thousand in number; but I only give statistics of the two thousand, in order to avoid fractional results in one of the fundamental factors of the problem. Out of these 2000 cases, the cures number 1980, the extractions 20, that is 99 per cent. of cures, and 1 per cent. of extractions. Such is the first essential fact obtained at the outset, but it in its turn splits up into a certain number of different conditions which it will be necessary to analyse.

Thus, with regard to the sex of the patients, 1138 were females and 862 males. We cannot, however, conclude from these figures that caries is more frequent in the female sex. What the numbers show is that women take more trouble about treatment and come more often to secure the attention of the specialist.

The patients observed were of all ages, from birth up to seventy years, and the statistics show that the most numerous group were between twenty and thirty years, the next most numerous group were those between thirty and fifty, then those between twelve and twenty. Last comes an infantile period of one to six years, during which only twelve cases of caries of the temporary teeth were treated and cured.

* I do not mean to say that the cases of extraction registered in the statistics were the only ones performed during the year 1874. At present all I have had to do with are extractions for Dental caries, and I omit all mention of extractions performed in cases of irregularity, anomalies in position, and abnormalities of the wisdom teeth.

The data as to the seat of the lesion give very interesting results, which will be found in the general table. Below I give some of the principle statistics.

With regard to the distribution of Dental caries in the two maxillæ, we observe that the upper jaw is more frequently affected than the lower, in the proportion of 1225 to 775. On the other hand, the difference in the liability of the left side as compared with the right is represented by the ratio 992 to 1008.

Another problem, which comes under the head of relative position, relates to the kind of teeth attacked. I have recorded in a previous work statistics of this nature collected without regard to therapeutic views, and amounting in all to 10,000 cases.* My present results, which were collected with a view to therapeutics, are very similar. I give them below with a view to their comparison.

STATISTICS AS TO RELATIVE FREQUENCY OF POSITION.

	Previous statistics. 10,000 cases.		New statistics. 2000 cases.	
	Number.	Percentage.	Number.	Percentage.
1st lower molar . . .	1810	... 18.1	317	... 15.8
1st upper molar . . .	1540	... 15.4	251	... 12.5
2nd lower molar . . .	1046	... 10.4	236	... 11.8
1st upper bicuspid . . .	940	... 9.4	160	... 8.0
2nd upper bicuspid . . .	810	... 8.1	139	... 7.0
Upper lateral incisor . . .	745	... 7.4	194	... 9.7
2nd upper molar . . .	690	... 6.9	139	... 7.0
Upper central incisor . . .	612	... 6.1	167	... 8.4
2nd lower bicuspid . . .	500	... 5.0	70	... 3.5
Upper canine . . .	445	... 4.4	112	... 5.6
1st lower bicuspid . . .	370	... 3.7	55	... 2.8
3rd upper molar . . .	220	... 2.2	62	... 3.1
3rd lower molar . . .	140	... 1.4	67	... 3.4
Lower canine . . .	70	... 0.7	25	... 1.25
Lower central incisor . . .	30	... 0.3	2	... 0.1
Lower lateral incisor . . .	30	... 0.3	3	... 0.15
Total . . .	10,000	Total . . .	2000	

* See 'Traité de la Carie Dentaire.' Paris, 1867, p. 48.

Passing to the relative proportion of cures in the different stages of Dental caries we arrive at the following results :

Cases of the first stage cured	22
Cases of the second stage cured	1360
Cases of the third stage cured	598
Cases of extraction in the third stage on account of grave complications	20
Total	2000

An examination of the therapeutic measures employed gives the following results :

In simple cases in the first stage immediate filling without other treatment was possible in . . .	18
Simple dressings to soothe slight pain or to produce a state favorable for filling	412
Astringents (tannin, carbolic acid) and various superficial stimulants	1147
Caustic applications—arsenic, chloride of zinc, actual cautery	370
Resection by means of a file or special excavator, with the view of removing the initial caries . .	25
Amputation, <i>i.e.</i> the complete removal of a carious crown, with the view of preserving an indolent stump which would support a plate or aid in the function of the mouth	8
Extraction as a last resource in incurable cases . .	20
Total	2000

The total duration of the treatment, which, however, was naturally very variable according to the period of the disease, was on the average five days. The period of treatment, which was practically nothing in the eighteen cases of immediate filling, was occasionally of a considerable length in the cases of the third stage. Several weeks were frequently required for cure on account of various complications. Lastly, the cases of the second stage required most often from five to eight days of astringent treatment. The statistics dealing with this point are given in the therapeutic column of the general table.

We now come to the details as to filling, the operation which concludes the treatment, and the object of which is, on the one hand, to restore to the cured organ a physical outline compatible with its physiological function, and on the other hand, to secure its permanent conservation by the principle of isolation already explained.

The metallic fillings are most numerous, and comprise—

1. Fillings with different alloys (silver and tin ; silver, tin, and gold ; silver, tin, and zinc) mixed with a sufficient quantity of mercury 1059
2. Gold fillings properly so-called 420

This disproportion between ordinary metallic fillings and those consisting exclusively of gold depends on different circumstances, the chief being simply the tendency of modern therapeutics. In fact, a very large number of cases of caries, either from their extent or their position, their direction, or their liability to inflammatory reaction, will seldom stand the long manipulations and the energetic pressure which gold fillings require. I have thus often been compelled to renounce the latter procedure, in spite of all the advantages that must on principle be accorded it.

For analogous reasons the use of certain cements, either of oxychloride of zinc, or, in more recent times, of certain pyrophosphates of lime and zinc, has necessarily been preferred in a certain number of cases, viz. in 450

Lastly, in certain cases of caries, most frequently of upper front teeth with very delicate walls, where none of the previous methods were applicable, fillings of a mixture of white gutta percha and pure silica were used. These cases numbered 18

We must also again add to this column of terminal operations the cases treated by simple resection or amputation, in number 33

And extractions, as before 20

There is a final table to be given under the general head of "Fillings," that, namely, showing the number of complete fillings after all previous complications had been cured, compared with the number of cases in which a serous or sero-purulent discharge proceeding from a chronic periostitis necessitated the introduction of a fixed and permanent drainage tube.*

Simple fillings, complete	.	.	.	.	.	1948
Fillings with drainage	.	.	.	.	.	32
Extractions	.	.	.	.	.	20
						2000

This concludes the general comparison of all the details that can be gathered from statistics of this nature, and it only remains, before closing the inquiry, to give the general table including all the above factors. I have, however, first a duty to fulfil, viz. to acknowledge the part which many of my pupils have taken in these long and delicate researches. The work of classification demanded sustained attention and great perseverance. Dr. Pietkiewicz, who was my chief assistant in 1874, declared himself willing to undertake it and give up his whole mind to it. The same work has been continued during subsequent years with like results, by the aid of several young practitioners, amongst whom I refer with pleasure to Drs. David and Cruet, of Paris; Piotrowski and Ciunkiewicz, of Warsaw; Quinet and Lambert, of Brussels; and more recently Drs. Redier, of Lille; Aguilhon, Combe, and Chauveau, of Paris; &c.

Many of these practitioners have, moreover, by their own publications and by their theses for the doctorate, contributed to what I may now call the perfect demonstration of the curability of Dental caries. I may mention, for example, Dr. Gaillard's memoir, "Sur la Carie Dentaire, sa nature et son traitement;"† a paper by Dr. Maurel, of the naval service, entitled "Sur le traitement de la carié;"‡ Dr.

* Cf. op. cit., "Sur le Drainage Chirurgical dans ses applications, &c.," 'Bulletin de Thérap.,' loc. cit.

† 'Essai sur la Nature de la Carie Dentaire.' Lyons, 1867.

‡ 'Archives de Médecine Navale,' 1877.

Statistical Table of Two Thousand Cases of Dental Caries, arranged from a Therapeutic Standpoint.

Number of cases, 2000.	Sex of patients.		Age of patients.		Position of caries.	Right side.	Left side.	Both sides.	Total in each jaw.	Stage of affection.	Therapeutic measures.	Mode of filling.	Simple filling, or with drainage.	
	M.	F.	Years.	Cases.										
Cured, 1980	850	1130	0—6	5	Central incisors	87	80	167	1213	First period, 22	{ Simple, 412 Astringent, 1147 Dressings: { Caustic, 370	Metallic: amalgam, 1059 gold, 420	Simple fillings, 1948	
					Lateral do.	102	91	193						
					Canines	59	53	112						
			6—12	88	First premolar	81	77	158	767	Second period, 1360	{ Amputations, 8 Resections, 25 Immediate filling without other treatment, 18	Cement, as zinc oxide &c., 450 Silicated gutta percha, 18	Fillings, with drainage, 32	
					Second do.	70	69	139						
			12—20	460	First molar	129	118	247						8
					Second do.	67	71	138						
					Third do.	30	29	59						
			20—30	814	Central incisors	1	1	2	767	Third period, 598				
					Lateral do.	2	1	3						
					Canines	10	14	24						
			30—50	553	First premolar.	25	30	55						
					Second do.	30	39	69						
					First molar	159	155	314						
50—70	57	Second do.	117	117	234									
		Third do.	28	38	66									
		Central incisors	1	0	1									
0—6		Lateral do.	0	1	1	12								
		Canines	0	0	0									
		First premolar	1	0	1									
6—12		Second do.	0	1	1	8								
		First molar	2	2	4									
12—20	2	Second do.	1	0	1						Extractions for severe complications, 20			
20—30	16	Third do.	3	0	3									
		Central incisors	0	0	0									
		Lateral do.	0	0	0									
30—50	2	Canines	0	1	1									
		First premolar	0	0	0									
		Second do.	0	1	1									
50—70		First molar	0	1	1									
		Second do.	2	1	3									
		Third do.	0	2	2									
70		First molar	2	1	3									
Second do.	0	2	2											
Third do.	1	0	1											
Extractions, 20	12	8				1008	992	2000	2000	2000	2000	2000		
Total, 2000	862	1138		2000						2000			2000	

Cruet's thesis, "Sur le Traitement de Caries Dentaires compliquées;"* and Dr. Combe's more recently published thesis, "Sur l'Acide Arsénieux dans ses Applications a la Thérapeutique de la Carie Dentaire," &c.†

Conclusions.—From the collective statistics given above, I think I am entitled to draw the following conclusions:

1. Dental caries is curable in the immense majority of cases.

2. The statistics show that cure is possible in 99 per cent. of cases, thus reducing the proportion of extractions to 1 per cent.

3. Similar results may be obtained in every-day practice by following a rational system of therapeutics founded on an exact diagnosis of the period and variety of the affection, and a precise idea as to particular therapeutic indications of each case.

OUR CONFESSIONAL.—WHEN TO CROWN OR PIVOT CHILDREN'S TEETH.—A CASE IN PRACTICE.

Two year ago a little girl of ten was brought to me, with a central incisor broken about two thirds off, for advice as to immediate pivoting or not. Being devitalised and carefully filled, though perfectly healthy, postponement of further operation till older was recommended. The incisors were so shaped as to be in contact only very near the cutting edge, were very close but regular, the canines not quite fully erupted as usual externally. The result has unfortunately been that, through the loss of the crown of the central as a keystone of the arch, the teeth on both sides have fallen together and inside the root of the central, probably by pressure of erupting canines and lips. The disfigurement, which is considerable, I shall seek permission to rectify by expansion and the insertion of an artificial crown, first on retaining plate and then on the root. There would thus seem to be circumstances when the immediate pivoting of teeth for children is justifiable.—WALTER H. COFFIN.

* 'Thèse de Paris,' 1878.

† Ibid, 1879.

British Journal of Dental Science.

LONDON, FEBRUARY 15, 1882.

THE POSITION OF THE PROFESSION.

FOR the last few weeks the 'British Medical Journal' has been generously publishing in its remotest column and its minutest type a correspondence on the unimportant subject of the position of the Dental profession. The favour has been accepted in the spirit in which it was offered, and the correspondence has been characterised throughout by an "I hope I don't intrude" air of meekness. As an individual trait, no one recognises the beauty of a spirit of humility more thoroughly than we do; but it is an attitude of mind which is open to certain objections when it is assumed on behalf of others. At any rate it is advisable that those who bow the head as proxy for others should first assure themselves of an entire absence of stiff-neckedness on the part of those whom they represent. The correspondence in the 'British Medical Journal' would not perhaps be worth spending our space upon, were it not that some of the letters at any rate give expression to a feeling of insecurity and of dependence on the medical profession, which we know is very common amongst some of our leaders, but which we are equally sure is not shared in by the bulk of their Dental colleagues. This must be our excuse if we devote the present article to a subject on which, as a general rule, it is our wish to say as little as possible. Happy is the nation, we are told, which has no history; and happy, we would echo, is the profession which feels no call to prate about its position.

An American visitor on his return from the Congress lately told his home-keeping friends that "the mass of the English Dentists were just outside the Court circle." That was, of course, a very vulgar remark, but we are not sure

that the frantic efforts of some well-known London Dental practitioners to deny their profession and to hide their blushes at belonging to it under the shadow of a medical diploma do not equally smack of vulgarity. It was a happy thing for the profession at large during the agitation for the Dentists Act, that those amongst us whom we most revere did not lend themselves to this sort of thing, but boldly threw in their lot with the body of Dental practitioners. The question as to whether the few have raised the many to their position, or have been pulled down by the many to theirs, which is the chief point of difference between the correspondents of the 'British Medical Journal,' we have no wish to discuss. What seems to us the more manly line for all to take is to recognise the *status quo*, to accept with unwavering loyalty the results of the Dentists Act, and to talk as little as may be about position. No self-respecting man cares to owe his position to his profession, and no position is worth caring for which is not the product of what one is and does oneself. The public esteem is withheld from no one simply because he is a Dentist, and in a sensible community is given to no one simply because he is a lord.

We are thus opposed to every course of action on the part of any section of the Dental profession which argues a desire to preserve the old position of subordination to the medical profession. We have been made into a separate profession by Act of Parliament, we are not medical men, and any attempt to cling to the old order of things on the part of those who have professedly accepted the new seems to us as illoyal as it is illogical. We know that all men who are worth their salt have a craving to separate themselves from the ruck, but we have yet to learn that the field of Dental work is in itself too lowly or confined to allow of the gratification of such ambition. We thoroughly sympathise with those who are anxious that their claim to be on the Dentists' Register should depend on something more than the fact that they were in practice before a given date, and we would gladly see greater facilities offered to practitioners to pass through the curriculum required to take the English license. But we think that those who have taken the license

should be satisfied with the recognition of the fact in the Dentists' Register, and should not attempt to separate themselves off from their brethren and to make a profession within a profession by buying the right to put their names at the fag-end of the 'Medical Directory.' Such a course of action appears to us a confession of weakness, and is certainly not calculated to aid the consolidation of the profession.

We have, indeed, hitherto refrained from saying a word on the burning question of the Dental licentiates' list in the 'Medical Directory,' because we have known that our views on the subject were opposed to those of men for whom it is impossible not to feel the highest respect. But we think that the time has now come when something should be said on behalf of those who are left out in the cold, though the question is not really an important one, except as showing a mental attitude on the part of some of our leaders which we cannot but deplore. We know that the Odontological Society, by giving a subsidy of twenty pounds to the owners of the 'Medical Directory,' has given its official sanction to the other view of the question. But we would respectfully suggest that the whole position should be again reviewed, and that the action recently taken should be reconsidered as to its bearings on the whole profession of Dentistry. It is, perhaps, much to ask that men should willingly surrender a position which they value, but the real surrender was made when the Dentists Act was passed, and all that we ask is that such surrender should be loyal and faithfully carried out to its logical end.

THE lay press so seldom honours the Dentists by taking a simile from their operating room that a certain confusion of mind may very easily be pardoned when it does make any exception in our favour. The 'Saturday Review,' in commenting on the new *clôture* proposals, says: "The Government have an abundance of proposals to offer for the cure of obstruction, but they will not allow one of them to be even

considered until they have first provided for the suppression of legitimate liberty of debate. Mr. Gladstone is like a Dentist, who, after humouring a patient by filling, stopping, and drilling his tooth, should end by saying decisively, 'I am afraid it must come out.' Only Mr. Gladstone improves upon the Dentist by taking out the tooth in the first instance and then showing how successfully it might have been treated had it been left in." If the present House of Commons were as insane as a patient would be who wanted his Dentist to humour him so far as to reverse the natural order of the procedures of drilling and filling, it would be scarcely to be wondered at if the Prime Minister should disregard its humours.

THE English Branch Council of the General Medical Council, at its sitting on the 9th inst., gave its consent to Mr. Lionel Davis, of 140, Edgeware Road, registered Dentist, to institute proceedings against Mr. Charles Smith, of 94, Praed Street, Paddington, and Mr. C. Valleek, of 106, Edgeware Road, for describing themselves as surgeons and Dentists, and practising in that capacity, their names not being registered in the Dentists' Register. We are quite willing to believe in the disinterestedness of Mr. Lionel Davis's motives, and, indeed, the sanction given by the Branch Council to his proceeding is a sufficient guarantee that he is, in the words of the Council's solicitor, "a respectable person." But we think that most of our readers will agree that the case ought not to be allowed to form a precedent for other similar prosecutions. We are disposed to regard all such prosecutions with dislike, but if they should be found really necessary to secure the full benefit of the Dentists Act then there cannot be two opinions as to the advisability of their being in all cases undertaken by a society and not by private individuals. The public, taught by subjective experience what a powerful part self-interest plays in all human actions, is very apt to look upon prosecution as persecution, wherever there is the remotest suspicion of a

self-interested motive on the part of the prosecutor. It has, in fact, a very natural distrust of the "*mens conscia recti*."

THE annual meeting of the supporters of the Edinburgh Dental Hospital and School was held on the 25th ult., when the annual report of the Dental staff was read and unanimously approved. The number of patients treated during the past year was 4643, viz. males 2140, females 2503, and showed a very satisfactory increase on the previous year's returns, while "the number of students attending both hospital practice and lectures has slightly increased, and must be regarded, considering the transitional state of Dental education, as decidedly satisfactory." The report also gives some interesting statistics as to the occupations followed by the patients treated at the hospital. The fact that nearly a quarter of the patients declared themselves as of no occupation, while an additional seventh consisted of married women, shows how widely spread is the superstition that Dental services are to be regarded as a luxury for those who have leisure. The Dental profession have still much preaching before them ere they will get the public to see how much more important the functional integrity of the teeth is to the active workers than to the drones of life. Next to the "leisured classes," patients came in greatest numbers from domestic servants (416), labourers (202), compositors and printers (146), and bookbinders (105), while the tailors, a proverbially intelligent class, contributed 94. These figures are interesting enough, but we should like to see institutions like the Edinburgh Dental Hospital publishing statistics of more real scientific value, such as those which Dr. Magitôt presented to the Medical Congress, and which we have given in another part of this number.

FOR the present, of course, the cases treated in such institutions as the Edinburgh Hospital must necessarily show a very unsatisfactory preponderance of extractions.

But every one will re-echo the hope which the staff express in their report that in time their patients will be educated to a proper appreciation of the value of their natural organs, and will apply for relief before extraction is rendered necessary. The fact that only 425 teeth were stopped (53 of them with gold) during the year, can hardly be regarded as satisfactory, except in its favorable comparison with previous statistics, and the schoolmaster will have to be very much more abroad in Scotland, well educated as it is, before the Dental profession can declare itself satisfied. We have been too long teaching boys to decline Dens, without showing them the danger of Dens declining itself. A little of the admirable practical method of that worthy but much-maligned monitor, Mr. Squeers, might not be out of place in modern education.

ONE is so constantly meeting with curiosities in the way of advertisements that it becomes rather difficult for the most inventive genius in the advertising line to startle the mind out of its customary serenity. The Parisian journals, however, according to the 'Correspondenz-Blatt,' have lately been publishing an announcement which shows that one must have quite underrated the potentialities of Dental imaginativeness. A certain Parisian Dentist, living at such and such an address, "has the honour of announcing to his numerous patients that, during the approaching winter festivities, he is prepared to lend out full sets of teeth or even single teeth for weddings, balls, soireés, and dinner parties."

THE death is announced of Dr. J. Shepherd Fletcher, a highly respected Manchester practitioner, and the brother of Mr. Thomas Fletcher, of Warrington. His chief title to fame, apart from a life spent in earnest devotion to his duties, was the share he took in founding the Hospital for Consumption and Diseases of the Throat in John Street, Manchester. Dr. Fletcher was one of the first in Man-

chester to recognise the importance of the principle of partly supporting hospitals by patients' contributions, and it was mainly due to his advocacy that the hospital with which he was so long connected was the first to carry this principle into practice.

It is very much the fashion nowadays to use a mixture of anæsthetics instead of a single agent. The mixture most usually adopted in England is that proposed some years ago by Dr. G. Harley, and consisting of one part of alcohol, two of chloroform, and three of ether. But other mixtures have been largely used on the Continent. The Vienna mixture, under the use of which 8000 operations have been performed without a single accident, consists of three parts of ether and one of chloroform; while Billroth's favourite mixture is composed of three parts of ether, one of chloroform, and one of alcohol.

THE Association of Surgeons practising Dental Surgery will hold its annual meeting for the election of officers on the 15th inst., when the following list of Fellows will be recommended by the Council to be appointed to the offices named below:—*President*.—Samuel Cartwright. *Vice-Presidents*.—J. A. Baker, Thomas Edgelow, Francis Brodie Imlach, S. J. A. Salter, F.R.S.; John Smith, M.D., F.R.S. (Edinburgh). *Treasurer*.—S. Hamilton Cartwright. *Hon. Secretary*.—J. Hamilton Craigie. *Council*.—Edward Bartlett, T. W. W. Fay (Liverpool), F. Fox, Peter Orphoot, M.D. (Edinburgh), W. G. Ranger, Augustus Winterbottom.

A DEATH from chloroform is reported as having recently occurred at Munich, in the case of a woman on whom a Dental operation was being performed.

It is stated that the eminent Russian surgeon Pirogoff died of epithelial cancer, which perforated the hard palate.

WE have received the recently published Catalogue of the Library of the Odonto-Chirurgical Society, together with the rules for the lending of books. The library appears to contain most of the standard Dental works, and, as at present constituted, is well calculated to form the nucleus of a really valuable collection. But many additions will have to be made to it, especially to the general department, before the library corresponds to the reputation of the Society.

IN a paper read before the Medical Congress, in the Section of Materia Medica, Dr. William Squire called attention to the value of ethyl bromide as a local anæsthetic, and described it as being of the greatest service to the Dentist. He has lately reiterated his assertion in the 'Lancet.' "Instead of merely acting as the ether spray in numbing pain by the cold produced in its evaporation, I found under a spray of bromide ether," he writes, "that all feeling ceased not only before the part was frozen, but even before it had lost its redness; and, further, that this effect can be produced without spray by short covered contact."

IN a paper on vivisection in the current number of the 'Fortnightly Review,' Dr. W. B. Carpenter incidentally alludes to the serious deterioration in the health and vigour of wild animals when kept in captivity, and gives the following interesting facts in support of his assertion:—"No orang or chimpanzee brought young to this country has ever attained adult growth, none surviving the second dentition. The skeletons of caged carnivora are often good for nothing as museum specimens, their bones being rickety and distorted. The teeth of menagerie specimens of the hyæna (I have it on the highest authority) are seldom good enough to serve as guides in the determination of fossil species." No wonder that men in their self-imposed captivities in city cages exhibit similar results.

The Dental Examiner.

[*Note.*—Dental materials and appliances intended for notice in the “Dental Examiner” should be sent to the Editor at 11, New Burlington Street, W. All preparations not generally known should be accompanied by a lucid description and a clear statement of their composition. The formulæ supplied *will not be published* unless a written permission is given by the maker.]

C. ASH & SONS' DENTAL RUBBERS (*continued*).

PASSING from ordinary and improved black rubbers, we now desire to speak of those darker shades of colour more generally used by the profession than any other kinds. They are usually of a dark brown, a light brown, or a brick-red colour, and vary considerably in their density, their strength, and their times in vulcanising. If we examine No. 11, for instance, we find that this quality is called whalebone No 1, and is of a rich brown hue, taking a very high polish and packing readily. The directions are that it should be vulcanised for fifty minutes at 320° , but we prefer the results obtained by vulcanising at 310° for one hour and a quarter. It does not contain much colouring matter and runs twenty-five sheets to the pound. No. 2 whalebone (in my list No. 12) is very similar to No. 1, and if anything rather lighter in colour, but its specific gravity is rather more, as the pound only contains twenty-four sheets. The No. 1 whalebone is the strongest vulcanite we have yet tested, and when vulcanised as directed will bear a weight of eight pounds without breaking, indeed, it then only bends at right angles but will not snap. The No. 2 (a cheaper rubber) is very nearly as strong, and after being subjected to a weight of seven pounds is bent and shows at the edges a sign of rottenness. For bridge lowers these rubbers may safely be constructed without any strengthener, and the most delicate uppers may be made with the assurance that they will not break, although they have a tendency to bend.

The two vulcanites marked in Messrs. Ash's catalogue as ordinary No. 1 and 2 should be particularly noticed. They are both of them strong, reliable rubbers, No. 1 being much

lighter in colour than No. 2. They require a good deal of vulcanising and are not brittle after two hours' baking at 315° . They are without doubt the cheapest rubbers we have yet examined, although it must never be forgotten that most of the cheap vulcanites do not run more than twenty-two sheets to the pound, and some of them less. Their strength is less than the whalebone, but when we come to generalise in our concluding notes we shall point out their merits and defects.

The orange, red, and brown (marked in my list as 15, 16, and 17) are the lowest priced rubbers made, being no more than ordinary black in price. We are thoroughly convinced that no manufacturer can surpass them at the price. No. 17, the brown, we have used very largely, and it speaks eloquently for the enterprise of this house when we note the uniformity of its quality. They may be vulcanised in one hour if the heat is allowed to stand at 320° , but a much better result is obtained if the temperature is not allowed to exceed 310° , and the time taken at one hour and twenty minutes. All these specimens run twenty-two sheets to the pound, and in all these experiments the time taken to arrive at the vulcanising temperature has been not over fifteen minutes.

Of Child's G rubber, much as we admired it at one time, little can be said. It is very red in colour and in the directions given is to harden it at 315° for two hours. At this temperature it is many shades darker than when vulcanised for one hour and a half, and it readily breaks at a weight of three pounds. When hardened at the shorter time it will stand four pounds, and can then hardly be said to snap, but becomes rotten at the angle.

The rubber named A. E. (American elastic) is very like a preparation some time ago introduced, called Bowspring. It is hardened in a short time, one hour and a quarter at 310° , but its elasticity is not a recommendation, as it bends at a small weight and finally gives way at a pressure of only four pounds. We hope in our concluding paper to go through the pinks introduced by Messrs Ash, and will then make some concluding remarks on the experience afforded by these examinations.

Special Article.

A BIRD'S-EYE VIEW OF THE ODONTOLOGICAL SOCIETY'S MUSEUM.

[SECOND ARTICLE.]

THE "Malposition of Cuspidati." This series presents a large number of specimens, and although the wisdom tooth has been credited with appearing in almost every imaginable position, I think when we have looked carefully through this section, we shall see that the canine tooth is not far behind the *dens sapientiæ*, although it may not cause so much pain in its wanderings. There is no doubt that the canine teeth must cause some inconvenience in certain cases, as they commence to be erupted at an age when all the surrounding teeth are in their places, but in a great many cases this could be avoided were the temporary canines allowed to remain until their permanent successors were ready to take their place. Of course, in the case of large permanent incisors and bicuspid appearing in a small jaw, or when the temporary canines are accidentally knocked out, we have very little control over the cuspidati, but I am afraid that a great many are removed long before the time for the permanent successor to appear.

Returning to the specimens, No. 23 is the first to attract attention; it is a superior maxilla with the right canine directed forwards and inwards, with the lateral surface impinging on the roots of the right incisors and the root in proximity to the fang of the first bicuspid. A very good view can be had of the position of this tooth, as the alveolus on the palatal surface has been removed. In No. 24 we find a somewhat similar condition on the left side of a superior maxilla; it is lying nearly horizontally with its lateral surface behind the incisor teeth, and the lingual surface showing on the palate, the root is in proximity to those of the bicuspid teeth. No. 29 is the superior maxilla of a female, aged twenty-two years; in this case both canines are in malpositions, the point of the right is exposed in the palate close to the incisive foramen, and the left is in contact by its mesial surface with the linguo-distal surface of the neck of the central incisor, and points forwards to the median line; it is within the arch and occupies obliquely the position of

the lateral, having forced that tooth backwards and outwards. The last and best specimen I shall mention of the superior maxilla is No. 38, in which we find the canines lying horizontally on the surface of the alveolar arch, which, the other teeth having been lost, is almost absorbed; the points of the crowns are nearly in contact in the median line. The most interesting case of this class in the inferior maxilla is found in No. 31; here we see (the anterior plate of alveolus having been removed) both canines embedded in the jaw with the labial faces of their crowns in contact in the median line, their roots sloping obliquely outwards towards the internal border of the jaw; resembling the letter **V** inverted. No. 41 is another interesting abnormality connected with the inferior maxilla. In this case the canine is embedded thoroughly in the substance of the jaw, in almost a horizontal position, with its labial surface upwards, the apex pressing against the root of the right central incisor; the alveolus from the anterior surface of the jaw is removed, so as to show the tooth in its entirety. For transposition Nos. 47 and 51 are the best; in these we find the canines have changed places with the first bicuspid on both sides.* The remaining specimens are all worth careful examination, but space will not permit of more comment in this section.

In viewing the "Malposition of Incisor Teeth," we see them more or less rotated, inclining to the right or left, or taking up more than their allotted space, but we do not find the abnormalities that are attending the other teeth; no doubt this to a great extent would be owing to the fact that, firstly, they are developed and retained in the premaxillary bone, consequently are cut off from the developing bicuspid and molars, and, secondly, they arrive at an age when they only have the temporary teeth to interfere with their position. We also see in this series that irregularity of the incisors is not confined to bipeds only, for in Nos. 70 and 71 we have two anterior portions of the lower jaws of sheep, in which is observed great crowding and irregularity, and again, in No. 106 we have the anterior portion of the jaw of a horse, in which one incisor appears fully half an inch behind and to the inner side of the other teeth. The only case of non-eruption is in No. 72, where the right central incisor is embedded in the bone beneath the anterior nasal spine, the apex of the root appearing in the floor of the nasal fossa.

* It is noticeable in examining these specimens that a great many have evidently been discovered *post-mortem*, and I think it would repay any practitioner having the opportunity to examine all maxillæ where any teeth have not been erupted.

The cause of the irregularity is probably owing to a supernumerary tooth which has taken up the normal position in the jaw for the central incisor. The bone in front of the tooth is removed, showing its position. Transposition is also somewhat rare, only one case being exhibited, viz. No. 112, where the right central and lateral are transposed.

If there is one class of tooth which we could dispense with more readily than another, it is the supernumerary tooth, and by looking at the "Models of Supernumerary Teeth" this impression is forced more strongly upon us, for here we find that teeth of both the temporary and permanent sets are pushed about in all directions by this class of tooth, which inserts itself between, in front, behind, and even in the place of recognised teeth, taking upon itself the most varied shapes, from the simple peg to shapes very closely resembling the natural tooth, and from these to large irregular masses of tooth structure covered with enamel and having four or five cusps. The most favourite place for these teeth to appear is in the anterior portion of the mouth either between or behind the central incisors, and then we run straight to the molar region, the bicuspid region being the most free. No. 171 is worthy of special notice; it is an upper model containing five supernumerary teeth dispersed irregularly over the anterior portion of the jaw. No. 196 is the lower model of an old lady, age unknown, with a supernumerary tooth beneath the mucous membrane projecting through internal alveolar plate between bicuspid teeth. The best specimens of these teeth appearing in the bicuspid region are to be found at No. 184, a model of a lower jaw with three bicuspids ranging with the other teeth on the left side; and at No. 226, the model of an upper jaw, in which on the left side the second bicuspid had been removed with its fellow on the opposite side, and was replaced by a tooth in form like a lower bicuspid. We also find these teeth resembling those of the permanent set to such a degree as to render it impossible to say which is the supernumerary tooth, and of this kind No. 175 is a good specimen, with five permanent lower incisors; also Nos. 161, 162, 163, all with five temporary incisors, also 243 with a supernumerary lateral on the right side of the upper jaw, and 244 with a similar tooth on the left side. Our last specimen is the skull of a bear, in which on the right side is a fully developed supernumerary canine, situated behind the original tooth, and only the slightest degree smaller.

The series of cases of abnormality in succession and cases of retarded eruption of teeth is a series well worth studying, for it throws light on a question that has been asked more than once at our Society, and must have occurred to every prac-

itioner, viz.: What ought to be done when a temporary tooth is retained in the jaw after the time that its permanent successor ought to have appeared? If a temporary tooth is removed and no permanent tooth takes its place, the patient blames the practitioner, but again we often see that the permanent teeth are not erupted, or are thrown out of their course by the retention of the temporary teeth, and illustrative of this, two specimens are worthy of attention. No. 272 is an inferior maxilla; the second temporary molar is retained and wedged down by the pressure of a forward-leaning first molar, consequently the second bicuspid is not erupted (the external plate of alveolus is removed showing the bicuspid); in this case of course if the temporary tooth had been removed the permanent successor would have taken its place in the arch. The other specimen is in the Museum of the Dental Student's Society; it is an inferior maxilla in which has been retained a temporary molar, the external plate of alveolus is removed, but no trace of the permanent tooth can be found.

The other specimens are also very interesting, although they would be worth more if we could get the maxillæ instead of the models. No. 273 shows the models of upper and lower jaw of adult, aged twenty-seven; the four lower incisors had been retained, on their removal no permanent teeth appeared. No. 276, model of upper jaw, aged twelve, where only the first permanent molars had been erupted. Most of the anterior temporary teeth had been knocked out accidentally at the age of three years. No. 281, upper and lower models, aged two years and eight months, only three teeth have appeared in each jaw. No. 299, upper and lower models of patient, aged thirteen, absence of all teeth except superior central incisors. No. 301 is an upper model of a patient, aged seventy-five, erupting a right third molar, and No. 306 is an upper model of a patient, aged twenty-one, with the absence of the laterals and bicuspid, whilst a temporary molar is retained in its place.—W. W.

THE ordinary monthly meeting of the Odonto-Chirurgical Society was held on the 9th inst., when a paper by Mr. Laws, of Weymouth, entitled, "On Surgery Talk; or, Conversations between Dentist and Patient," was the chief item on the agenda.

Reports of Societies.

ODONTOLOGICAL SOCIETY OF GREAT BRITAIN.

ORDINARY MEETING, HELD 6TH FEBRUARY, 1882.

S. LEE RYMER, Esq., President, in the Chair.

CASUAL COMMUNICATIONS.

MR. HENRY SEWILL showed a cast taken from the mouth of a child, nine years of age, showing a supernumerary lateral incisor so like the true lateral as to render it impossible to distinguish which was the proper tooth to extract. He proposed to wait until the canine appeared, and then act according to circumstances.

He also showed an upper lateral incisor and a lower bicuspid, from the apical foramina of which a piece of barbed root extractor projected. These were cases in which acute periostitis had been set up by the foreign body, and the patients had come to him for relief. The same accident had, however, happened in his own practice; he had generally succeeded in recovering the broken fragment by passing up a broach with a little cotton wool twisted round the end; but in one case, in which this device failed, he at once extracted the tooth.

Mr. Sewill then called attention to a communication lately made by Dr. Magitôt to the French Académie de Médecine, in which he asserted that alveolar periostitis was so generally met with in diabetic patients as to be of considerable assistance in forming a diagnosis of the latter complaint. He (Mr. Sewill) had met with two cases which seemed to bear out the correctness of this observation, and he should be glad to hear if the experience of others had been similar.

He then mentioned the case of a young gentlemen, of very nervous disposition, who lately came to him to have a small cavity filled in an upper molar. Whilst Mr. Sewill was preparing the cavity the patient had a distinct, though short, epileptic attack, followed after a brief interval by a second. After this the operation was completed without further interruption. On inquiry it appeared that the patient had had epileptic attacks some years previously, but had apparently ceased to be liable to them.

Mr. COLEMAN said he had had several cases of epileptic fits after extraction without gas, but none where gas had

been used. Mr. Lyons had a patient who went into a fit each time a tooth pulp was touched; the pulp was touched three times and each time a fit occurred.

Mr. J. S. TURNER said he had occasionally had the misfortune to leave part of a nerve extractor in a tooth, but he had not yet met with any bad results from the accident, and did not see that these need necessarily follow. He thought the association of alveolar periostitis with diabetes must be merely a coincidence. He had certainly seen cases of advanced diabetes in which the gums were quite sound, and similarly he had seen cases of alveolar periostitis in which there was no suspicion of diabetes.

Mr. MOON said he could not agree with Mr. Turner as to the harmlessness of leaving the point of a nerve extractor in a tooth. In such cases, if he failed to recover the barb, he always thought it right to acquaint the patient with what had occurred, and advised extraction of the tooth.

Mr. GADDES remarked that three or four years ago he broke off the point of a nerve extractor in a lateral incisor and failed in his attempts to extract it; he then pumped in some thin osteo, and subsequently filled the tooth, without any bad results.

Mr. SEWILL replied that leaving a small piece of steel in a root canal, if the nerve had been previously destroyed, could not cause any harm. In the cases he had brought forward the barb had protruded beyond the apical foramen into the alveolus and had set up intense irritation.

Dr. CAMPBELL then showed his "New Mode Vulcaniser," and gave a description of it.

PRESIDENT'S INAUGURAL ADDRESS.

The PRESIDENT then delivered his Inaugural Address, of which the following is an abstract:

After thanking the Society for the honour it had conferred upon him by electing him to his present distinguished position, Mr. Rymer referred to the alteration in the by-laws, which enables the Society occasionally to choose a President from amongst the provincial members, and of which he had been the first to reap the advantage. In the earlier years of the Society's existence, during a period of warm contention as to the policy best calculated to promote professional interests in the future, it would have been exceedingly inconvenient for the President of the day to have been non-resident. He (Mr. Rymer) had a vivid recollection of the years of anxious toil which preceded the settlement of the question then in suspense, and knew that the

work necessitated such frequent meetings and important consultations as to render it imperative that the President should always be at hand ready for any emergency. But now that the Odontological Society was, happily, no longer troubled with any political controversy, with meetings held at stated, convenient, and not too frequent intervals, and with the travelling facilities of the present day, country members, many of whom were in every way well qualified for the office, might occupy the Presidential chair with but little inconvenience to themselves and none to the Society.

The events of the past bearing upon the present improved status of the Dental profession had already been described from that chair with such graphic and impartial accuracy as to render it unnecessary for him to take up time with any lengthened allusion to the reform movement of 1856, or to the history of the subsequent proceedings. But there was one important event which he thought might be rendered clearer by a slight sketch of its connections, viz. the amalgamation of the Odontological Society with the College of Dentists. The announcement of the fact that the College of Surgeons, after long deliberations, had come to the conclusion that it would tend to the public advantage to grant diplomas in Dental Surgery, and the publication of the code of regulations, were naturally hailed with gratification by the Odontological Society, whilst to the College of Dentists it came as a surprise, since it had been thought that too strong a feeling existed in the medical profession to allow of the institution of examinations and the issue of diplomas in a speciality of any kind, either by the College of Surgeons or any other body. The duty of those who had the direction of the affairs of the College of Dentists at once became clear. To have allowed the continued existence of the college on an independent basis after the battle had been thus fairly fought out would have been unwarrantable under the circumstances. Instead of helping on a good cause, it could only have carried on an embarrassing opposition, and postponed indefinitely the attainment of fraternal concord. The executive, understanding the importance of the crisis, placed themselves in communication with the Council of the Odontological Society with the object of arranging an amalgamation; this was consummated with entire cordiality and good feeling on both sides, and, he had no hesitation in saying, had never for a moment been regretted. Had the profession continued to be racked with wide-spread dissensions, the Dentists Act of 1878 would not have been secured. As it was, the opposition to the measure, arising from a small section with impracticable views, was futile, and, together

with far weightier obstacles, was overcome under splendid generalship.

This was unquestionably the most important event which had happened during the twenty years which had elapsed since the amalgamation. Its healthy action had already become apparent, but it would require time before all its latent powers for good could be fully developed; its elevating influence would increase with each passing year.

To utilise the Act to the utmost that invaluable organisation, the British Dental Association, had been established on a sound basis, prepared to deal with almost any question affecting the interests of the profession. Every thoughtful practitioner would do well to strengthen the Association by becoming a member, and he hoped that its already influential constituency would be materially augmented in number before the time came for holding the anniversary meeting in Liverpool.

Mr. Rymer then went on to speak of the changes which had taken place in the granting of diplomas in Scotland and Ireland, the development of Dental hospitals and schools, the growth of Dental literature, the progress of Dental journalism, and the flourishing condition, not only of the Odontological Society itself, but also of the provincial societies subsequently established on the same lines. Having thus glanced at the history and present condition of the more prominent institutions of the profession, he passed on to speak of the future, both as regards the work of the Society and of the profession at large. The work of the former showed no signs of exhaustion; there was no boundary to the field of scientific investigation. Facts brought out in one inquiry would often suggest a variety of new ideas, each in itself capable of further development.

So also with regard to the profession at large. The great work of the present age had been the steady progress in practical hygiene, by which human life was being gradually but surely elongated, and the profession could aid this by ascertaining more clearly the conditions which would favour longevity in the Dental structures. Distinguished authorities asserted that there was no valid reason why men should not live comfortably for a hundred years, and the census returns showed that a certain number did now reach that patriarchal age. Why was it otherwise with the vast majority? A satisfactory answer to this question would probably assist us in learning a great deal more than we at present know about local lesions.

In conclusion, Mr. Rymer remarked that in fulfilling the duties of his office he felt sure that he might rely on the

kind support of the members. "Following immediately the presidency of a brilliant and exceptionally successful year, I am conscious of the disadvantages under which I labour, but with your kindly and sustaining influence I may, nevertheless, be enabled to follow the admirable example of my predecessor to an extent sufficient to maintain the dignity of the Society."

The PRESIDENT then announced that at the next meeting, on March 6th, a paper would be read by Mr. Charters White. The meeting was then adjourned.

ODONTO-CHIRURGICAL SOCIETY.

ORDINARY MEETING, JANUARY 12TH, 1882.

JOHN SMITH, ESQ., M.D., F.R.C.S.ED., President, in the Chair.

THE minutes of the previous meeting having been read and approved, the following gentlemen were balloted for, and duly elected members of the Society:—Wm. Henry Key, L.D.S. Glas., Rhyl, North Wales; Thomas Gaddes, L.D.S. Eng. and Ed., 46, Seymour Street, London; John Stirling, L.D.S. Eng., Ayr; John Urquhart Crichton, Perth.

This concluded the private business, and visitors were admitted.

DISCUSSION ON VULCANITE DENTURES.

The discussion on Mr. Biggs' paper on "Vulcanite Dentures," read at last meeting, and published in our issue of January 2nd, was then opened.

Mr. MACLEOD said—The paper is one which, though it may lead to profitable conversation, is hardly of the nature to start a severely adverse, and therefore lively critical discussion, from the simple fact that it deals with a subject with which we are all pretty familiar, and in regard to which we go upon very much the same lines as Mr. Biggs himself. Still, there are one or two statements put forth which can hardly pass without remark. In the opening, Mr. Biggs said that plaster for Dental purposes was not improved by the addition of any chemical substance. I think that is too general and sweeping a statement. It holds good so far as sodium salts and other efflorescents are

concerned; but I find the addition of potash alum more rapidly sets the plaster, and thus prevents that large amount of irregular expansion which generally occurs when the plaster is simply mixed with plain water, and the effects of which are more frequently felt than acknowledged. Mr. Biggs gives us as his reason for it that the addition of potash alum does not improve the plaster, but rather deteriorates it, especially when put in the vulcaniser. Now, on the contrary, I find that the mixed plaster with potash alum is quite as strong after being steamed as plaster mixed with water alone; and if this is so, then the other advantages which I have mentioned in connection with its use certainly recommend potash alum to the attention of the profession as a useful adjunct, *not only in taking impressions*, but in the general use of the workshop. With regard to flasks, Mr. Biggs queried, "Of what use is the lid of a three-part flask?" The lid, I think, is a useful and necessary appendage. It enables you to pour plaster on and around your case in small quantities, and so the better ensure the absence of air blows; and a second and important use is that by removing the lid you can cut down to the under half of the flask, remove the upper, and clear your work of the plaster encasement, without subjecting the delicate porcelain parts thereof to the strain of twisting which accompanies the separation of the two halves. These, I think, are advantages sufficient to recommend its continuance, and there is no disadvantage connected with its use which can possibly cause one to cavil at it. Of course in the manner in which Mr. Biggs described his method of embedding wax duplicate, instead of using the plaster model, it might not be quite so necessary in the insertion of the piece, but it is equally necessary in the extraction of the piece from the flask after vulcanisation. As to embedding the wax duplicate, as described by Mr. Biggs, in lieu of steaming upon the original plaster model, I do not think that it is a method which will meet with the general approbation of the members of this Society, for the simple reason that it had always been their endeavour—or why did they use plaster of Paris in impression taking?—to get as correct a duplicate as possible of the mouth, undercuts and interstices included, as on these they depended very much; or rather, on the adaptation of the plate to these they depended very much for the retention of the artificial denture. Mr. Biggs admitted that by his method the plate did not fit so accurately to the interstices in partial cases, but said that it went easier into the mouth. No doubt it did get easier into the mouth, but it would get out of it easier too; and

that would make one very dubious as to the doing away with the vulcanising upon the original plaster model. Another portion was original on Mr. Biggs' part, namely, the dicing by means of netting on the palatine surface of the denture. I cannot say that I agree with Mr. Biggs in considering it either useful or ornamental, nor can I see of what avail it would be as a preventive measure against cutting the palatine surface of the denture by the workman, because the plaster would be as likely to be filled with air blows as before, and the netting would not prevent the rubber getting in. Then he spoke of the advantage of scraping the buccal and labial surface of the model, and also across the posterior palatine portion, so as to secure a more close adaptation of the piece. That I consider quite unnecessary, if the original model is used, but it might be somewhat necessary if they used Mr. Biggs' method of the duplicate wax, and embedded it in the manner described by him. But even then it could only be occasionally used with success, because they could not possibly scrape the buccal surface of the model without causing a tightness and pressure, and unless they scraped it upon a portion of the buccal surface which lay at right angles with the alveolar border, and was opposed by a parallel or an undercut surface, it would only lead to displacement. He (Mr. Biggs) also, in conclusion, spoke about celluloid, and the only objection he took to it was the fact that it became so discoloured when put into the smoker's mouth. The same objection might hold good in regard to rubber. I may say that there are other and greater objections to the use of celluloid which might have been noted, and which, I think, are more deserving of attention than the one alluded to by Mr. Biggs.

Mr. MACINTOSH.—Although agreeing to a great extent with Mr. Biggs' methods of working vulcanite dentures, I differ from him on one or two points. First, as to flasks, I prefer gun metal, as it resists the action of the sulphur, and although not stronger than the malleable iron, it lasts much longer, provided it be of the same weight of metal, those flasks got at the Dental Dépôt being much too slight. The lid gives facility in cutting out the case when vulcanised, but is a source of weakness to the flask. The union of a model with the investing plaster in the flask is, I think, quite strong enough for all practical purposes, provided the model be well soaked, and inserted with its base resting on the bottom of the flask, and the plaster be thoroughly set before proceeding to pack and vulcanise. I see no objection to Mr. Biggs' method in using his wax base plate as his

model, if it can be made not only to fit the model exactly, but can be taken off the model without disturbing the fit; for sometimes we find a model of the upper jaw which is underhung both on the buccal and lingual side, and where it would be very difficult to take off the base plate without disturbing the fit. For some years I have been painting the models with a solution of silicate of soda, and have found it of great advantage in strengthening the models, and in giving a smooth surface to the vulcanite, which parts from the plaster without any brushing. I also cover the outer surface of the base plate with strong tinfoil, which is a very great saving of time, as the plate requires very little polishing after leaving the vulcaniser. I have made one or two experiments on Mr. Biggs' principle, but they have not been so successful as I anticipated, although I have taken particular care in having a good fit before putting into the flasks to be vulcanised. I find there is considerable contraction in the vulcanite.

Mr. WILSON.—I quite agree with Mr. Biggs that the mode of heating, as also the temperature to which the rubber is exposed in vulcanising, is really a point of some importance. The slower the temperature is raised to the requisite point, the better for the rubber; but as regards the length of time that degree of temperature should be kept up, it seems to make little or no difference whether it is one hour and a quarter or ten hours. The tendency is undoubtedly to rush up the heat too quickly. I consider the thermometer, as usually inserted, to be simply useless as a guide to the temperature of the interior of the boiler. The steam pressure gauge seems the only one. As regards the flask, I may say I have never used a three-part flask, and I think that in the method I follow Mr. Biggs will find a slight improvement on that described in the paper. Instead of depending on an overlapping edge of plaster (necessarily thick) to retain the teeth *in situ* under pressure, I use a curved brass plate, which has its upper edge bent at right angles so as to form a ledge, more or less broad, as the case requires, so as to overlap the edges of the teeth, while the lower edge is bent irregularly, so as to offer great resistance to displacement when embedded. A very thin layer of plaster is needed between the plate and the teeth, so that the parts are much better exposed for packing. (Mr. Wilson passed two of these plates round for inspection.) Then, as regards the model to vulcanise on, I have, as to its preparation, to differ *in toto* from Mr. Macleod, as, while he looks on potash alum as almost invaluable when you want plaster to set rapidly, I consider its presence as a disadvantage when the model has to stand pressure

when moist. So long only as the model is kept perfectly dry does it add to its hardness. As to Mr. Biggs' mode of dispensing with a duplicate model, and flasking the wax direct, it certainly saves time, and the case may fit as well as those on metal plates do; but you certainly will not get the fit you would obtain from a duplicate of the original plaster impression. As to scraping from the buccal and the extreme palatine margins, I think that with a plaster impression it would do harm in place of good, these being just the parts I find to hurt, if there is tightness at all. Lastly, as regards the want of taste in setting the teeth, I think gum blocks the most thoroughly mechanical; you cease to have control over your work, and are bound down to the particular style of the blocks. If a breakage occurs, it means the whole block, and I can easily conceive of circumstances where it may involve a new set. As regards artistic effect, I think nothing gives the operator a better chance than when he has the separate teeth to place in any position relatively to each other that he pleases.

Mr. CAMPBELL.—I have just one word to say regarding the cutting and carving of models. I think that a model made from a correct plaster impression could not but be harmed by cutting and carving, especially the buccal and palatine surface of the models. Mr. Biggs contrasted the use of celluloid with vulcanite. So far as my experience goes, I cannot say that celluloid is very useful, except so far as they might use it for lining the gums front of a vulcanite case, and here it is unsurpassable.

Mr. FINLAYSON.—I agree generally with what has been said regarding the paper of Mr. Biggs. It has been got up in a very laborious and painstaking manner, and I think Mr. Biggs deserves the thanks of the Society for starting a subject like this, which is one of the practical sort that are so much desiderated. In the use of potash alum I have had considerable experience since the subject was brought under our notice as a society, and I do not think that the stucco models made with it in combination have ever, in any case, been found to get crushed in the flask or in packing—and the admixture is employed throughout the whole process. The solution employed is of the strength of half an ounce to the gallon of water. With models taken in plaster with alum I have always been able to obtain a good suction, which has been found permanent in the finished plate, provided the gums were thoroughly attenuated and not liable to further change of form. The dicing spoken of, and shown by Mr. Biggs, I do not like, and I think it less artistic than the natural rugæ of the palate. I quite agree with the

remark made by Mr. Biggs in his paper, supported by Mr. Wilson, that higher temperature and diminished time produce shortness or brittleness of the cooked piece, and would at all times vulcanise, if I could afford it, in the way indicated by them.

Mr. WILSON.—I merely said they should give it plenty of time to rise to the vulcanising point.

The CHAIRMAN.—Do you mean, Mr. Wilson, that if the temperature were once risen, it would not require to be maintained any time?

Mr. WILSON.—I have tried one hour and a half and ten hours, and can find no difference.

Mr. FINLAYSON.—I was just done. Mr. Biggs says he is indebted to Dr. Best, of London, for the idea of trimming the model; I would rather style it mutilating it, and that indicates fully my opinion regarding the system of scraping a good plaster model. It should not be needed. Gum blocks I am not in favour of, having made a good many cases with them. Continuous-gum teeth, minus the gum, produce a neat, natural case, and can be made as irregular as can be desired. They require wide bites, however.

Mr. CORMACK.—In regard to the plaster, I must side with Mr. Wilson. I have not had very great experience in gum blocks, although I have used them. But probably it will be better for me to speak upon what I know well about. When in Glasgow some time ago, Mr. Biggs kindly invited a number of his patients who wore complete upper sets of gum blocks, to see me. I may have been fortunate in the faces or in the gums, but these cases which I saw, in regard to artistic appearance, were everything that could be desired. I was delighted with them in regard to the fit, which was perfect, and I have never yet seen any upper cases adhere to the palate with greater tenacity. One of the cases had been in the mouth twelve months, if not more, and I think that is a good test. However, it requires a large stock of teeth to select from, which is a drawback, but as Mr. Biggs made it a specialty, he had that, and consequently had little difficulty in meeting different requirements. I have tried his way of pressing the wax plates on. In a great number of cases I have been successful. I have occasionally made a slip, but when I take a plaster model and can take two casts from it, I prefer that mode.

Mr. BIGGS.—I have to thank the gentlemen present for their very courteous criticism of the paper. I am sure that it has been an honest criticism, which is a great matter. I asked fair criticism and desired no favour; I have just got that. As regards what Mr. Macleod said in connection with

the plaster of Paris, there is no person who is more willing to record his deep gratitude to Mr. Macleod than myself, for the great comfort it has been to know of the mixture of the potash alum in taking impressions. It has been one of the greatest boons to me since I have known it; and I think in saying that I am not saying too much. I have had great difficulty many a time in taking them as perfect as I can now do, since Mr. Macleod had introduced to the Society's notice the mixture of plaster with potash alum. I beg, however, to differ from Mr. Macleod in the matter of the plaster of Paris being deteriorated by the mixture of any material whatever, when the flask was to be introduced into the vulcaniser. One of the things that shows me the weakness of Mr. Macleod's arguments was the reference to the little air blows. Air blows are a thing I know nothing of. The plaster I use is of a very thick consistency, so that I never see such a thing as blows in the plaster, which I used to have when I used the plaster very much thinner. If the plaster is made sufficiently thick and stout, and used without the addition of any of those other things, every member would bear me out in saying that they would find the plaster much better. Mr. Macleod seems to think that I am wrong in the use of the flask without the lid; I beg to differ, because wherever there is a flask with a lid, I am certain every one must have occasionally found that the lid was a source of annoyance in more ways than one. Perfection of the flask is a very great matter, and I say that a flask that had but the two halves, such as I showed, was made in such a way that on striking the edge with a hammer the case and surrounding investment would jump out. With ordinary flasks, on freeing the case from the flask, if the least heat remains, the case is apt to be twisted on trying to sever it from the plaster with a knife. But my flask will bear hammering on the edge, because it is made of malleable cast iron. Then, in regard to suction, Mr. Macleod seemed to think that either the model must be inaccurate or the fitting be deteriorated by modelling of the wax plate, and that it must of necessity require this scraping of the model to make it at all a close fit. I again differ from Mr. Macleod; I think I can take a plaster cast that I do not think any member could succeed in getting better. These I showed were, I think, very good plaster casts, and I generally know when I get a very good plaster one. These casts, notwithstanding their accuracy, I would have no hesitation in carving and cutting in the way I spoke of. The difficulty that has arisen in some of the members' minds has been caused by the fact that I have not been able to carry them along with me to the full extent that

I had meant. Those things were very apt to be misleading when not properly carried out, and a person not having seen the thing personally done, could not carry the purpose properly with him. In regard to the netting, I still hold it to be a very good thing. The netting on the surface of the model brought the cast away much cleaner from the model, and it was no detriment whatever. I had a case to-day in point. That case was something like that of which Mr. Macleod spoke. One of the edges of the model stood very high and the other very low, so low that the attachment of the lip was almost adjacent to the very edge of the gum. I thought I would have difficulty with it. I did not vulcanise it upon the model; I vulcanised it in my ordinary way, and found when I put it into the mouth I had nothing further to do. The lady was unable to pull it from her mouth until she tilted it up. I can assure you I was a little astonished myself at the immense success of it. While I speak of this I do not hold a hard and fast line, and do everything in the one way. I depart from those things like other practitioners under certain conditions. I use my judgment. Of course there were cases that would do for gum blocks and there were cases that would not. In cases where gum blocks were suitable, they were by far the most beautiful and natural. To be able to adapt blocks to that extent one must indeed have a very large stock. Just a week ago I received 1000 from Mr. White, of Philadelphia, all irregular. In that way I got a very good assortment, and am able to meet many of the cases that turn up. There are exceptional cases, but the generality of cases could be met very well with the ordinary gum blocks of Mr. White, if they had a sufficient selection of them. Then Mr. Macleod said that vulcanite as well as celluloid was darkened by tobacco, but let me tell Mr. Macleod that in the case of the celluloid it permeated through and through, while in the case of the vulcanite it was only on the surface. Mr. Mackintosh showed them some specimens that he had got up, one of which he remarked had been made on my principle. I can point out that he had not carried out the theory at all. They would observe that the wax had first of all been made up to the model, and afterwards a deposit of wax had been poured in between the model and the original plates. Mr. Wilson spoke of the plaster, and there was no doubt that he was correct. I have been, as you are aware, twenty-two years in the Dental profession, and I do not give up the old way of working unless I have some really good reasons for it. I might say that I have used all sorts of contrivances for keeping up the suction cases. I have often made those

little discs which were supposed to come from America; I have given all those things up and come to this, and I think that it has been the most successful I have ever wrought out. I beg to thank you, gentlemen, and ask your pardon for anything I may have said amiss, for I have not meant it in any offensive way at all.

The CHAIRMAN said—I feel sure the Society is very much obliged to Mr. Biggs for his paper. I think it a very important paper indeed, and I would have made any remarks necessary, but really, every point has been taken up. I think, however, that the firing from the wax pattern plate that Mr. Biggs referred to, is more adapted for partial cases. I have sometimes overcome a difficulty by this method, where a sharp undercut impression was taken in plaster. This is not so necessary if we take it in wax. In regard to scraping, of course if carried to excess upon the buccal side of the gum, or even on a deep palate, it might produce a tendency in the plate of springing down off the palate, if carried too far. Its principle is, however, very much the same as providing in the centre of the palate a suction cavity. Mr. Wilson's observation with regard to the firing of the vulcanite, was very interesting, but I have not made any experiments in that way. With regard to the celluloid, Mr. Biggs anticipated me in saying that the blackening of the vulcanite is generally superficial. I believe that the celluloid is darkened through and through by agencies of the kind. As to what Mr. Finlayson said about the state of the gum for suction sets, the general shape of the palate, and the condition of the gum, are certainly most important factors in getting a suction set to work well. Failures are not always owing to the mode in which the model has been taken, because we find that in many cases the suction will not succeed if the gum is in a state of transition or change at the time. Mr. Cormack admires Mr. Biggs' gum block pieces as very artistic, and I quite agree with him. The only disadvantage is the danger of a breakage, involving a considerable amount of labour in its repair; I think they are exceedingly artistic. I think we should tender a vote of thanks to Mr. Biggs for bringing such a practical paper before this Society.

This was accordingly done.

Mr. MACLEOD.—Regarding celluloid, I do not mean that was the only disadvantage, but what I wanted to convey was, that it was the least of its disadvantages which Mr. Biggs had taken hold of. There were many other disadvantages, upon which I do not touch. Regarding gum teeth, I am very happy to say that I can corroborate Mr. Biggs in that particular, and go in with him thoroughly. I quite disagree

with Mr. Wilson regarding gum teeth, and have often argued the subject with him, and upheld that gum teeth, selected, were extremely useful, and that in many cases they excelled any other teeth, except continuous gum, in artfully concealing their own artfulness. Like other teeth, they were subject to accidents, but were, comparatively speaking, easy to repair. Gum teeth held a strong place in artistic dentistry.

ARTIFICIAL VELA.

Mr. MACLEOD, in exhibiting an artificial denture with velum attached, said that he did not do so in consequence of a peculiarity of the case itself, but that he might introduce to their notice a more simple way of making moulds for similar cases. The method was extremely simple, and an improvement upon Mr. Norman Kingsley's and Mr. Smith Turner's. He was free to say this, as it was not his own device, but the idea of his assistant, Mr. Durward. It consisted of three pieces, an under flat piece, a central, or heel piece, and an upper flat piece, and produced a velum which was free from any transverse ridge or rough edge, which would require trimming before being put in the mouth.

SPECIMENS.

Mr. E. A. CORMACK exhibited (1st) an exfoliation from right lower jaw of a little girl, æt. $3\frac{1}{2}$, a sequel to measles. It consisted of the posterior half of the alveolus of second temporary molar, and the alveolus of the first permanent molar holding the tooth in situation. The piece of the maxilla was taken out with great ease by an elevator. The gums were in a spongy, and in some parts near the bone, in a sloughing condition. (2nd.) An accumulation of tartar on a lower denture of two teeth. This was in the mouth for nine years. During seven years of that time the patient was a martyr to dyspepsia. Two years ago she removed from Edinburgh to Pitlochry, where this disease entirely disappeared. The specimen was unfortunately much spoilt by the patient after its removal from the mouth.

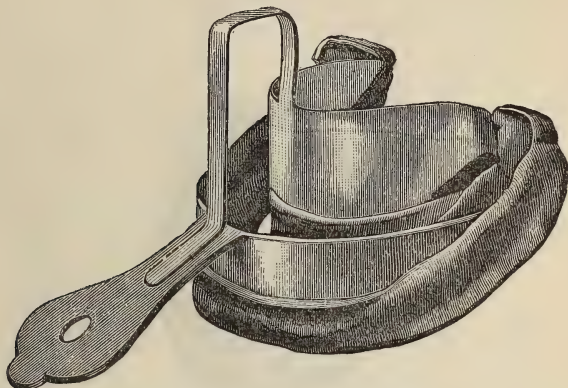
Both these specimens were presented by Mr. E. A. Cormack to the museum.

Mr. WILSON exhibited a permanent upper canine, in which the enamel extended nearly half way up the root, on both lingual and labial surfaces.

NEW ADAPTATION OF COFFER DAM.

Mr. BIGGS then showed a new coffer dam appliance, and said in explanation, "Troublesome, nervous patients are

frequently cropping up having sensitive lower teeth to fill. To apply the ordinary coffer dam upon a number of such teeth, where, probably, not one of them can be plugged on the first visit, would be simply a great waste of time. And yet the trouble in excavating and the pain is very greatly increased by the saliva flowing into the cavities, added to which the provoking habit such patients have of pushing their tongues into the cavities, sometimes precluding the possibility of seeing not only the cavity, but even the tooth itself.

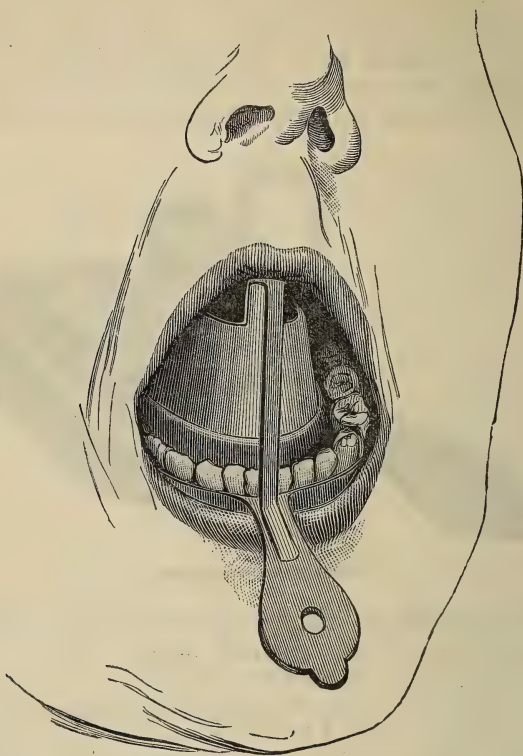


Coffer Dam Appliances.

“This apparatus is designed to act as gag, lip distender, tongue holder, and coffer dam, all in one, with the advantage of being applicable in a second, and leaving the entire lower set of teeth free to be operated upon individually or collectively. Of course I would intend the depôts to manufacture these, and supply them to the profession in various sizes.

“For teeth having their cervical edge decayed down to or below the gum surface, I have found a means of building up the tooth to its original contour, by a very simple and easily applied matrix, that is, by a piece of white iron, commonly called tin, rolled out thinly and cut to about two inches long for the molars and about three eighths broad for bicuspsids, about three quarters long, and depth to suit length of crown. This is pushed between the adjoining teeth, and then bent by the fingers to the shape of the tooth to be built up, and may be secured by overlapping its extremities or by a strong clamp. Where the tooth is isolated a small strip of india rubber can be stretched from one extremity to the other, which, when the tin is bent, will form a complete dam and matrix combined. This tooth is built up in that way, it is

filled with that amalgam we are hearing so much of at present, viz. the Eclipse amalgam, prepared by Mr. John Jamieson, of Glasgow. I have seen fillings of this I put in



Coffer Dam, as applied in Mouth.



Showing Matrix and Dam applied on Tooth.

about two years ago ; of course that is too short a time to be any test, but, at all events, they are still good and retain their colour admirably."

EXTRACTS FROM 'VERNON GALBRAY; OR THE EMPIRIC:'

WITH NOTES AND REFERENCES BY THE AUTHOR.*

(Continued from p. 149.)

VERNON GALBRAY AT HOME PROFESSIONALLY.

ALTHOUGH Mrs. Galbray could only be regarded as a very quiet member in society, she was neither an inactive nor an uninterested one at home. Her husband's proceedings were not lost upon her, and she had her own part to play—by no means an easy part either.

The servants had to be drilled to do their duties effectively—the opening of the door and the showing of the visitors into the reception-room being practised for hours together. A trusty young man named Jonson was engaged and dressed in black: he was as carefully taught his part as if he had to play it in a theatre, and the way the professional drama opened was thus:—

Mrs. Vernon would loudly knock at the street door, which Jonson would open immediately, and standing very much in sight, close it upon the lady entering.

"Can I see Mr. Vernon Galbray?"

"Have you made an appointment?" Jonson asked.

"No."

"Then I fear it is impossible, but be good enough to walk this way," and the supposed patient was shown into an ante-room.

The performance was then taken up by the empiric himself, who, apologising for being so much engaged, desired Jonson to show the visitor into the reception-room.

These full dress rehearsals took some time in perfecting, and had not long been properly mastered before the performance commenced in earnest, for it was not many weeks before the advertisements began to attract public attention.

The good wife very much wished to have a new carpet laid down in the operation-room; this, however, Galbray would on no account permit. It was revived as much as possible everywhere except round the operating chair, and that part was made to look as shabby as could well be, in order that the visitor might believe it was worn out by the constant tread of the operator.

Mrs. Galbray was also of great use in the reception-room, where she sat in outdoor costume, always in the height of fashion. She wore a heavy veil so as to hide her face as much as possible, and had with her two or three paid friends always waiting for an interview with the distinguished professor. If a *bonâ fide* visitor made his or her appearance, the dialogue would commence somewhat in this way:—

* 'Vernon Galbray; or the Empiric.' E. T. Whitfield, 178, Strand. 1875.

"What a delightful man Mr. Galbray is," paid visitor Number One would remark.

"Yes, indeed, and very clever, I should think," Number Two would answer.

"One of the most skilful operators in London, or he should not attend to me. I assure you, ma'am, until I came here I was in continual torment."

Then Mrs. Galbray would timidly venture on a word, and her broken English made her doubly interesting. "I am much pleased to hear you say so, ladies, for I am very nervous."

The poor patients' ears were open to these praises, which gave them confidence before they entered the dreaded room. Mrs. Vernon would go in first, and shortly afterwards paid visitor Number One was shown into the operation-room. Visitor Number Two being left alone with the patient, a conversation would commence between them, and if the last arrival should by any chance confess that he or she required artificial teeth, visitor Number Two, with a confidence that was quite engaging, acknowledged that *she* wore a piece of Mr. Galbray's work, and although it *did* cost a little more than that constructed by other practitioners, yet it was well worth the extra price, it answered so admirably and was so much admired.

The touter would also try to learn the social position of the patient, and what fees might be safely exacted. These particulars she communicated to the worthy operator the moment she had an opportunity (for she was always admitted before the patient was seen), and he did not fail to profit by the information. Patients would also frequently confide to the touter the particulars of their sufferings, by which means Galbray, being previously informed, gained great fame for his insight into disease, by disclosing to them the character of their symptoms and the necessary treatment to be adopted.

And so this delightful and lucrative game was kept up—varied according to circumstances—but in no case were two *bond fide* patients allowed to communicate with each other if the proprietor of the establishment could prevent it, and as he did not desire to have more than one transaction with his patients—at least for some time to come—he took care to make that a profitable one.

Mr. Galbray, seated in his operation-room, looked around complacently; his copy of the 'Times' was on the table at his side, and he glanced now and then at his advertisement with evident approval. He was thoroughly well pleased with himself, and although his schemes were only in their infancy he watched the way in which they worked with satisfaction.

Jonson, his trusty attendant, was engaged in giving a finishing polish to the spitting-stand and a final touch-up to the room generally.

"Has Smitt been here this morning?" Vernon asked.

"No, sir."

"You told him to call?"

"I did, sir."

"How many have I waiting?"

"One, and Mrs. Lobb has just gone in."

Now Mrs. Lobb was the principal touter—the lady visitor Number One whom we have before alluded to. The empiric took up his paper, and after looking at it for a few minutes said to his attendant, "Go round to Smitt, and tell him I want to see him at once."

Jonson having departed, Vernon looked at himself in the glass, adjusted his white tie, then opening the door of communication between the rooms, said in a bland tone of voice, "Walk this way if you please, Madame, your appointment, I think, was for twelve," and Mrs. Lobb walked into the operation-room.

The door being closed the bland tone of voice was dispensed with, and the proprietor, turning to the lady, said sharply, "You are late to-day, Mrs. Lobb."

"I *am* late, but I have not been inattentive to my duties, sir. I have been round to all the chemists and druggists in the neighbourhood to ask for your address, and got three of them to write it down for me. They will not forget your name when they hear it again, I'll warrant."

This is not an unusual proceeding, and reminds us of Dr. Hannes, who is said to have had his liveried footmen running half over London to find their master, not forgetting to call at the clubs most frequented by medical men. (See 'Book about Doctors,' by J. C. Jeaffreson.)

"Vell, vell, who is waiting?" Galbray said, pointing with his finger to the reception-room.

"Not of much account, sir, at least as far as I could find out; but I could only throw in a few words."

"She shall wait then."

A gentle tap at the door interrupted further conversation, and Jonson entered, followed by a man whom he introduced as "Mr. Smith."

"Sit down, Mr. Smitt. I shall wait you this afternoon, Mrs. Lobb, and perhaps while Smitt is here I had better take the opportunity of introducing you to him."

The good lady looked surprised, but made no answer, and Mr. Smith, elevating his eyebrows, scanned the party to whom he was being introduced with equal astonishment. But Mr. Galbray did not offer any further explanation, so Mrs. Lobb left the room, followed by Jonson.

"I wish you to remember that lady when you see her again," Vernon said.

Mr. Smith again elevated his eyebrows as he had done before, and said, curtly, "I don't think I could mistake her."

The empiric sat himself in an easy chair, and looking at Smith, said, "You have a livery stable in this neighbourhood, I believe."

"I have, sir."

"And let for hire broughams and close carriages."

"I have every kind of vehicle, from a dog-cart to a wedding-carriage."

"Many horses?"

"At present over thirty."

"And respectable coachmen and footmen?"

Mr. Smith looked at his questioner somewhat puzzled, and answered sharply:

"I thought my establishment was well known. I do everything with style, sir, and can turn you out a carriage fit for any nobleman."

"I don't doubt it, Mr. Smitt. Will you look at this list?" and he took a paper out of his pocket-book. "I want to know on what terms you will let me have, first, a brougham, secondly a two-horse close carriage, and thirdly, if you have such a thing, an old-fashioned travelling carriage."

"I have all of these."

"I shall want you to drive up to this house in the morning, and remain waiting for an hour, with the brougham and also the travelling carriage. The closed carriage had better be at the door at about three o'clock and remain for an hour."

"I don't catch your meaning, sir," Mr. Smith answered, more surprised than ever.

"I will explain. Mr. Smith, you are a man of business, and will understand me. I wish my house to be known. I want the neighbours and passers-by to believe we have a fashionable connection, and that can only be done by a little management. You are a man of business, Mr. Smitt, and will understand me. In the morning I send a gentleman to your stables, you drive him round the square and up to my door. Your coachman will knock at my door—you know the knock a von horse brougham should give, and the gentleman will walk in and you wait for him about half an hour; you will then drive him away again and set him down wherever he likes. You are a man of business, Mr. Smitt, and will understand me."

Mr. Smith, although still somewhat puzzled, replied that he could do what Mr. Galbray required of him.

"The closed carriage is a different matter," the empiric continued, "that will require a little more attention. You will have to go to S— Street, the number I will give you, and bring a lady and some children, they will remain at my house at least half an hour,

and during that time you must drive up and down the street, waiting from time to time at my door. You understand this also, I hope, Mr. Smith."

Mr. Smith must have been very stupid indeed if he could not understand these plain directions, and terms were at last finally arranged between the worthy Dental practitioner and the job-master; Mr. Smith agreeing that for one month he would every day send three carriages, well appointed with coachmen and footmen, and that they should each of them remain for not less than half an hour in attendance upon Mr. Galbray, that gentleman undertaking to provide suitable riders to represent patients.

The empiric laid great stress upon the manner in which all this was to be conducted, and the great care which was to be taken that the same pair of coachmen and footmen should always accompany the same carriage. It was also specially arranged that Mr. Smith was on no account to let any of his servants know the object of these visits, and that he was himself to maintain strict secrecy as to his agreement with Mr. Galbray.

All this the job-master willingly promised to attend to, for as Galbray agreed to pay well it was a matter of profound indifference to him to what uses his hired conveyances were to be put.

Mr. Galbray rubbed his hands with evident satisfaction, and having bowed Mr. Smith out by one door opened the other to admit his patient.

Certainly he could make himself, when so disposed, very agreeable. He was great, as we have said, at talking, and merely to see his good-natured face and hear his silvery voice—if anything the pleasanter for its slight foreign accent—was enough to invite confidence in the most timid. He recommended but few operations of a painful nature, and those few were always performed by an assistant. His was, indeed, a very simple system. He was gentleness itself in all he had to do, kissing all the young children and complimenting all the mothers—with a pleasant word and smile for every one.

The male patients, it is true, did not like him so well as the female, for much as he tried to disguise it, the secret would creep out—he was a humbug—a humbug whose charges were out of all proportion to the services he rendered; and, although he represented in his advertisements that his fees were exceedingly moderate, the test of experience by no means proved their moderation. However, the money began to flow in regularly, and his early prognostications when in Holland were fast being realised. He was consulted not only by the needy or ignorant, whom the bait of promised cheapness induced to visit him, but well-to-do citizens—persons of title and men of learning allowed themselves to be gulled by his advertisements. Indeed, he continually had occasion to remark to himself,

how very pleasant and very easy it was to humbug the British public.

When this book was originally published in 1875, it received considerable attention, but opinions were divided as to its usefulness. One class contending that little good could result from attempting to convey wholesome lessons of truth under the guise of romance, while another section of the profession believed that fiction might be made the vehicle for exposing charlatanism, and that even in a tale the public might learn home truths that could not be conveyed to them readily in any other manner. All acknowledged that the picture was *not* an exaggerated one, and that the object of the book was commendable. The heads of the profession marked their opinion of its usefulness by writing over one hundred letters to an anonymous author. Strange that the Dental journals alone ridiculed the means that were being employed to effect this desirable end, while the purely medical organs, on the contrary, not only praised the laudable object, but favoured the method made use of to carry out these ideas. The public could not be educated by any number of leaders in scientific journals it was acknowledged, and a tale might be read for amusement and be instructive at the same time. Derision has before exposed abuses, and we have now before us plenty of evidence that this book has been useful in enlightening the public as to the true character of a quack.

We have, however, even at the present moment, a class who consider fiction useless in correcting abuses, for in a review on 'Vernon Galbray,' published last month in the 'Chemist and Druggist,' the writer says, "The weakness of the novel as a reforming power is exactly that which interferes with its value as a mirror of history." Yet he fairly acknowledges that the tale will be read for the interest contained in it, and we may add that if the facts are as stated no other conclusion can be arrived at but that such a work is calculated to expose the proceedings of the ignorant and disreputable, and that a story may be read for amusement and information at the same time.

(To be continued.)

Correspondence.

[We do not hold ourselves responsible for the opinions expressed by our
Correspondents.]

"THE SECTIONAL EXPANSION PLATE."

To the Editor of the 'British Journal of Dental Science.'

SIR,—As Mr. W. H. Coffin has not replied to my question in what I consider a straightforward and candid manner, I hasten to state how Dr. Coffin became acquainted with the principles upon which the "sectional expanding plate" is constructed.

It was after his return from America in 1868 (where he had been for two years previously), when he called upon me in Manchester, that I first showed him my models and explained to him the working of the plate.

This happened upon three several occasions. I afterwards lost sight of him entirely for some months. I called upon him subsequently in London, and found him trying to imitate my plate and vainly endeavouring to make the springs out of "knitting needles." Seeing his difficulty I promised to send, and did in fact send, him some of the wire which I then used and still continue to use—the very wire Mr. W. H. Coffin discovers to be pianoforte wire. This gentleman, then a mere boy, knowing nothing of Dentistry, could not form any practical idea of either plate or wire.

After this visit my acquaintance with Dr. Coffin ended, and I heard nothing more of him until a pamphlet he issued was placed in my hands by a patient of mine in London. I at once published a counter-pamphlet on 'Contractions of the Upper Maxillary,' in which I announced the fact that my ideas had been appropriated by Dr. Coffin in his pamphlet. Besides this, I explained the expanding, as also the contracting, power of the steel wire, from whence Mr. W. H. Coffin deduces his "pushing" and "pulling" levers in his paper read before the International Medical Congress.

I must emphatically deny having been an assistant to Dr. Coffin during the last twenty years. I just as emphatically deny ever having received one single idea from Dr. Coffin bearing upon my expansion plate. The only successful regulating plate ever used by him in my time was the vulcanite plate, with hickory or compressed wood wedges fitted to bear upon the posterior surface of the teeth. No split plate in any form was ever used so long as I was an assistant to Dr. Coffin.

Previously to being with him I was for five years a pupil

of Louis Berend, of Manchester, a man of great mechanical skill and ingenuity, to whom alone I am indebted for the foundation of my Dental education.

Mr. W. H. Coffin hints in his aforesaid paper that I took out a "patent," but "advisedly" allowed it to lapse. I do not exactly understand what Mr. W. H. Coffin wishes me to infer from this gratuitous observation; my only reason for doing so was to prevent his father from claiming the originating of the said plate.

Further comment is superfluous, and I leave the matter with perfect confidence to the unbiassed judgment of the profession. I am, &c., PETER HEADRIDGE, L.D.S.I.

Lime Grove, Manchester.

THE CASTING OF ZINC DIES.

To the Editor of the 'British Journal of Dental Science.'

SIR,—Permit me to reply to the remarks of Mr. Betts on the above-named subject. His remarks read as if my late paper on zinc castings solely gave them birth; yet, be that as it may, they utterly fail to weaken or illustrate the principle I advocated in your December number. First, Mr. Betts informs us that he "for some years used, as occasion may have required," the method I advocated. Just possible! But what I assert is, that it is not "as occasion may have required," but as a fixed, definite principle I affirm, and for all cases. Now, the upper half of an old flask has a top so very wide as to completely nullify the chief thing, viz. keeping of the blows of the hammer confined to one spot, whereas the tops of my hollow cones are of the size of a florin. Where are there flask tops so small? Again, a flask is barely an inch in depth, while my hollow cones give solid cones of zinc of two inches. Further, a mass of melted zinc will easily raise any flask top, or cone, do what you will, if not held down, &c. Take, for instance, a small plaster cast for a single tooth plate, what a slovenly lump of metal casting the flask top would form! With my cones nothing superfluous is added to an already large plaster model, or taken from a small one, in fact do for all. Also, Mr. Betts tells us, "that the dipping of zinc in the lead ladle is an antiquated proceeding." Quite so! yet directly after that remark he shows us how to carry this form of antiquity into shape by simply transferring the lead from the ladle to a cast-iron dish. By this I utterly fail to perceive how the "antiquated proceeding" is modernised; for the principle is not at all altered, but remains just where it was. Now, with my cones and flat counter-dies, both details and principles are altered, vastly for the best. Writing further, Mr. Betts

says that my plan of leaving the sand in front of zinc teeth "must tend to spread those teeth." Not so! simply because I well excavate the sand wherever the plate will come, and these excavations form solid banks of tin or lead as the case may be, so there is no strain on the zinc teeth, while the plate can most readily be relieved from its bed. The "antiquated proceeding" will never do for tin counter-casts, for it would cause every zinc tooth to break, yet tin counter-casts are the best. In spite of being considered egotistical, I boldly affirm my plan is the best. Those who would like to see my castings can do so and welcome, and thus judge for themselves.

I am, &c.,

GEORGE WARD.

428, Oxford Street, W.

COVERING THE TEETH WITH ARTIFICIAL ENAMEL.

To the Editor of the 'British Journal of Dental Science.'

SIR,—A patient of mine informed me a few days ago of a very novel, and IF CORRECT, valuable mode of treatment of honeycombed teeth. She said a friend of hers residing in the North consulted a Dentist in town about her teeth, which were made very unsightly on account of the before-mentioned defect. I questioned my patient very carefully to see if she were not mistaken in what she stated, as the only operation I could think of that was anything like analogous was in cases where the teeth are deeply eroded and are filled with an osteo-plastic, sometimes with gold, an operation done in the latter way very much in vogue in America.

I have never myself met with anything in any Dental work describing such an operation as COVERING the teeth with an artificial enamel. If any of your numerous readers have, I shall be very much obliged if they will kindly inform me of the name of the work where this may be obtained.

I am, &c.,

ZETETICUS.

A PRACTICAL HINT.

To the Editor of the 'British Journal of Dental Science.'

SIR,—The following may be of service to the readers of your valuable Journal. I have found, and those to whom I have recommended to use it agree with me, that the following is the best and cheapest material for embedding plate work in while soldering. Mix two or three spoonfuls of plaster, make into a ball, and burn in a fire to a white heat; when cool pound in a mortar, mix three parts with one part of fresh plaster, and use in the ordinary way. The oftener the same material is used the less liable it is to crack.

I am, &c.

W. J. CHENEY.

St. James's Street, Accrington.

MONTHLY REPORT OF CASES TREATED AT THE DENTAL HOSPITAL OF LONDON,

FROM JANUARY 1ST TO FEBRUARY 1ST, 1882.

Extractions	Children under 14	502
	Adults	748
	Under Nitrous Oxide	398
Gold Stoppings.....		119
White Foil ditto		3
Plastic ditto.....		443
Irregularities of the Teeth		145
Miscellaneous Cases.....		331
Advice Cases.....		192
Total.....		2881

WILLIAM HERN,
House Surgeon.

MONTHLY REPORT OF CASES TREATED AT THE NATIONAL DENTAL HOSPITAL,

FROM JANUARY 1ST TO JANUARY 31ST, 1882.

Number of Patients attended	1411	
Extractions {	Children under 14.....	301
	Adults.....	548
	Under Nitrous Oxide	64
Gold Stoppings	55	
Sheets of Gold used, independent of Pellets.....	55	
Other Stoppings	256	
Advice and Scaling	97	
Irregularities of the Teeth	35	
Miscellaneous.....	126	
Total	1482	

FRED. WM. BATE,
House Surgeon pro tem.

Communications have been received from Messrs. S. J. Hutchinson (London), P. Headridge (Manchester), G. Beavis (Newport), C. Truman (London), William Horn (London), T. C. Colledge (Leamington), George Ward (London), Hon. Secs. of Odontological Society, Adolph Witzel (Essex), J. J. Ritson (Beckenham), F. Austin Biggs (Glasgow), W. H. Coffin (London), W. J. Cheney (Accrington).

BOOKS AND PAPERS RECEIVED.

'Glasgow Medical Journal.' 'Report of Edinburgh Dental Hospital and School.' 'Pharmaceutical Journal.' 'Dental Advertiser.' 'The Use of Gas,' by Thomas Fletcher. 'Transactions and Catalogue of Library of Odonto-Chirurgical Society.' 'Le Progrès Dentaire.' 'Manchester Guardian.' 'Transactions of Odontological Society.' 'Lancet.' 'British Medical Journal.' 'Medical Times and Gazette.'

British Journal of Dental Science.

No. 339.

LONDON, MARCH 1, 1882.

VOL. XXV.

THE TREATMENT OF PYORRHOEA ALVEOLARIS, OR INFECTIOUS ALVEOLITIS.*

By ADOLPH WITZEL, Essen, Germany.

(Continued from page 161.)

BEFORE I pass on to describe my treatment of this affection I must beg of you not to infer that my method is a perfect one, or one which is reliable in every case. It is, indeed, the custom to regard infectious alveolitis as incurable, a view which finds its justification in the fact that the patients do not, as a rule, seek our aid until their teeth have become very loose, and have been rendered painful by the pressure of mastication. After what I have already said I need go into no further explanation of the reasons why such teeth can never be saved by conservative treatment. It is true that by suitable treatment, such as cleansing and disinfecting the pocket of gum, we can procure alleviation, but we can never obtain a permanent cure, and make the teeth again firm in their sockets, if the latter have been destroyed to the extent of more than a half.†

* A paper read before the annual meeting of the Dental Association of Germany at Heidelberg, on August 1st, 1881, and published in the 'Vierteljahrsschrift für Zahnheilkunde.' We have to express our obligations to Herr Witzel for the woodcuts.

† See Von Langsdorff's account of the success which is said to be obtained by removing the concretions from the teeth together with the diseased periosteum by means of Dr. Riggs' instruments ('Deutsche Vierteljahrsschrift für Zahnheilkunde,' October, 1881, p. 411). Von Langsdorff has not tried these instruments himself, and he cannot accordingly judge of Dr. Riggs' method from his own experience, but only from the statements which have been published in the American Dental journals. I have myself procured Dr. Riggs' instruments, and have used them in the treatment of the affection

In general my opinion is that the treatment of the affection should be directed less to the preservation of teeth which are already loose, than to using every possible precaution to prevent the putrefactive secretion of the affected alveoli from infecting those which are still healthy.

If we are to strive to cure the affection the first and most important step to be taken is to remove every tooth which is much loosened at the very commencement of the treatment. For all attempts to preserve a loosened tooth, the socket of which has been destroyed by the carious process to the extent of more than one half, will prove useless. It is of especial importance in the case of younger subjects not to delay any longer than possible the extraction of bicuspid and molars which have been attacked by alveolar pyorrhœa, for the later such patients submit to extraction the smaller is their chance of preserving the dental organs. We ought, therefore, to examine how far the alveolus still surrounds the neck of the tooth. In the incisors it is, as a rule, the labial and mesial portion of the socket which is first destroyed, and it is astonishing how far we sometimes have to pass the sound between the gum and the tooth before we feel the rough border of the alveolus. In the case of upper and lower molars, if the sound penetrates between the forked union of their roots, there is little prospect of saving them; for it is precisely the stoutest alveolar partitions which, as consisting almost exclusively of cancellous tissue, and being

according to the directions given. I have not, however, found it possible to excise more of the diseased alveolar borders, or to remove the concretions from the necks of the teeth with greater ease with these instruments than with those which I have figured (Figs. 4 and 10). At all events I must expressly state that I have not succeeded by the use of Dr. Riggs' instruments, and the treatment of the diseased alveoli with sulphurous acid, as recommended by him, in preserving any teeth the sockets of which had been more than half destroyed. There is no doubt that Dr. Riggs is entitled to praise for his treatment of this affection, and his published experience on the subject merits our full consideration; still, I believe that the success of his method has been falsely estimated and exaggerated in Germany. I have at any rate come to the conclusion that if we cannot succeed in this country in permanently fixing in their necrosed sockets teeth which have been rendered very loose by alveolar pyorrhœa they cannot meet with any better success in America.

therefore most richly provided with medullary tissue, become most rapidly disintegrated by the inflammatory process.

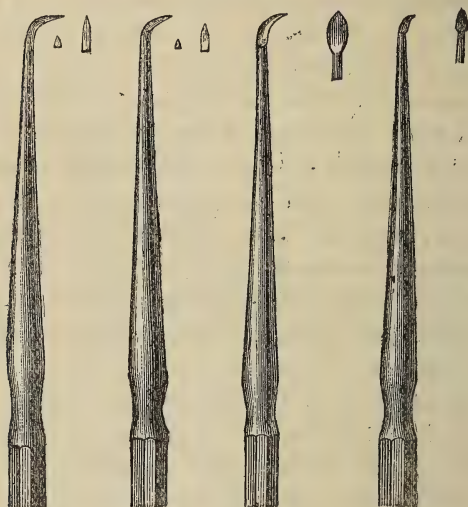
In a lady of about thirty-five years of age alveolar pyorrhœa began in the wisdom teeth of both jaws. In spite of my representations the patient could not make up her mind to have the teeth at once removed, but kept them in their diseased sockets until the pain experienced in mastication at length compelled her to have them extracted. In the meantime, however, the sockets of the second molars had also become more or less infected, so that soon one of these, too, had to be removed. After this experience the patient consented to an early extraction of the three second molars still remaining, the sockets of which had already become somewhat expanded, but which had not themselves as yet grown either loose or painful. The result of this operation was that the process was arrested in the alveoli of both jaws, and the first molars, which would otherwise to a certainty have fallen a prey to the affection, still remain sound after a lapse of four years.

The teeth adjacent to the affected ones will naturally be more or less loose, but as every extraction is followed by cicatrization of the alveolus and thickening of the surrounding bone this operation must necessarily have the effect of again more or less firmly securing the adjacent tooth. If now, according to my view, the alveoli of the teeth which are only moderately loosened are treated antiseptically we are entitled to expect a cure of the evil so soon as ever the faulty neighbour has been removed.*

* The question whether it is advisable in older patients affected by alveolar pyorrhœa to remove teeth the sockets of which are partially affected I am led by my experience to answer in the affirmative, for such loose teeth are only of very doubtful use to their possessor, and at the same time they prevent him from properly masticating with the teeth which are still sound. It is true that in the case of the incisors we ought for æsthetic reasons to delay extraction as long as possible and to attempt to heal the alveoli, but if we do not quickly succeed we ought even in this case to extract without delay, and after removal of the useless teeth to make a partial denture in order that the patient may become used to the wearing of artificial teeth before he has lost all his natural ones. The teeth which still remain unaffected by alveolar pyorrhœa render this easy for him, and if in time these

When after careful examination of all the teeth I have extracted those the sockets of which have been more than half destroyed I proceed to cleanse the remainder from all concretions situated below the gum. Beside the usual scaling instruments I have found the excavators figured below (fig. 4, and see S. S. White's Catalogue) well

FIG. 4.



adapted for the removal of these deposits. I strongly recommend you to use these instruments, for the most thorough cleaning of all the necks of the teeth is necessary as a preliminary if the subsequent antiseptic treatment of the alveoli is to be successful.

For the disinfection of the diseased alveoli, as well as for the general treatment of the affection, I regard a small glass syringe with fine gold canulæ as indispensable. For it is only by using such an instrument that we can bring the solution of carbolic acid and chloride of zinc which I recommend in this treatment into immediate contact with the

weak supports are lost, a common event in older subjects, the patients will have already become accustomed to a plate, and will more easily get over the discomfort of a complete set, resting as it will do on a jaw the alveolar process of which has entirely disappeared

pockets of gum and the diseased portion of the alveoli. As a rule, I use for this purpose Farrar's syringe (figs. 5 to 7).*

FIG. 5.



FIG. 6.



FIG. 7.

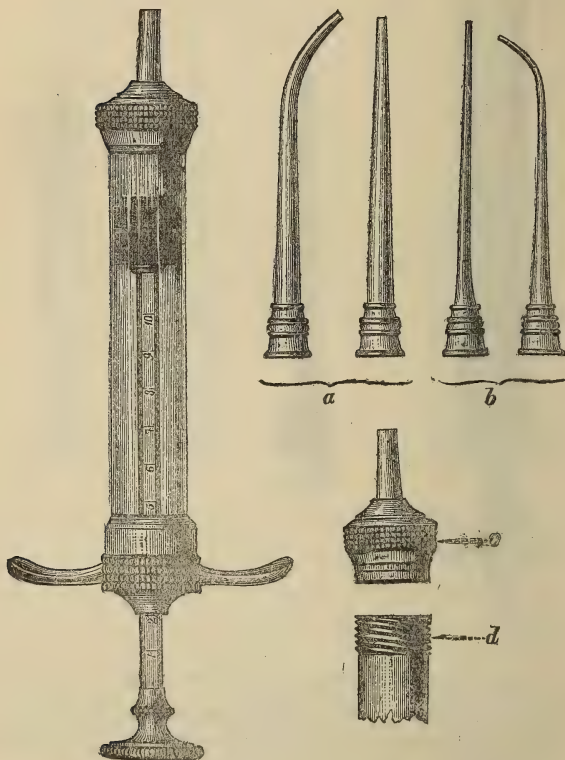


For those who prefer a cheaper instrument I would recommend the small glass syringe with four strongly-made canulæ sold by C. A. Lorenz, of Leipzig (fig. 8). The great advantage of this syringe is that the metal caps are not cemented to the glass cylinder but screwed on. In the above figure

* These woodcuts, which have been kindly lent by Messrs. C. Ash and Sons, represent the syringe in its natural size as sold by the firm of S. S. White for £2. The canulæ are made of 18-carat gold. The two thinner ones are used for injecting, the thicker for filling the syringe. The injecting canulæ, however, are not strong enough, and consequently break very easily. Their points should be made of stronger gold plate, and should be more accurately soldered to the tubes.

the portion *c* is shown removed from the screw on the glass tube *d*; the lower metal cap with its two arms is fastened to the cylinder in a similar manner. This construction of the syringe by means of screws renders it a sort of universal syringe, for we can fill it with alcoholic solutions, as well as strong caustics, such as chloride of zinc, carbolic acid, &c.,

FIG. 8.



and even with hot water, without any fear of rendering it useless, which, as you all know, is very apt to happen when the metal portions are merely cemented to the glass tube.

The four golden canulæ of this syringe are made of strong sixteen-carat gold plate. The two larger serve for syringing out carious cavities before filling, for cleansing and disinfecting suppurating alveoli, as well as for injecting

fistulous openings, &c. The strong straight canula can also be used for filling the syringe. The fine canulæ, which are of very small calibre, are also made of strong gold plate, but are filed so thin at their points that they can be easily introduced between the gum and the tooth as far as the alveolar border without any forcible separation of the gum from the neck of the tooth. I do not, however, use these fine canulæ solely for disinfecting the pockets of gum, for they are also admirably adapted for syringing out the root canals before inserting a filling.

The syringe comes into play in the treatment of alveolar pyorrhœa as soon as ever the necks of the teeth have been thoroughly freed from mucus and deposits of concretion, and it is used in the following manner:—First one lays a piece of blotting paper* on both sides of the alveolar border, in order to absorb the caustic solution as it flows out of the pocket of gum. Then having filled the syringe with the disinfectant you introduce the canula as far as possible between the gum and the tooth up to the border of the diseased alveolus. If you are using Farrar's drop syringe you next give two or three turns of the screw, at the same time carrying the point of the canula somewhat round the neck of the tooth. By this means the whole of the pocket of gum and the diseased alveolus are thoroughly bathed in the caustic fluid.

For disinfecting pockets of gum in connection with the incisors and bicuspid, and, as a general rule, in the case of all teeth in the upper jaw, I employ as far as possible the straight canula, reserving the curved canula for the teeth of the lower jaw. In all cases the point of the canula is to be well introduced at both the mesial and distal side of the neck of the tooth in order to disinfect the inter-alveolar parietes which form the seat of the disease.†

* An excellent preparation, which still appears very little known, is Parker's paper-fibre lint, to be procured of C. Ash and Sons.

† A few remarks upon the management of the syringe will not be out of place. The lumen of the canulæ is very small, and very easily gets stopped up at the point. To prevent this a few drops should be ejected from the syringe immediately after every time of using it. If this is delayed the

This mode of applying caustics is not, as a rule, painful to the patient. The only necessary precaution is to see that the portions of solution that flow out from the pocket of gum do not escape into the mouth, but are taken up by the blotting paper. In cases of alveolar pyorrhœa associated with pain two drops of tincture of iodine and aconite may be injected into the recess in the gum before the application of the escharotic, a much more effectual way of applying the tincture than simply painting it on the gum.

(To be continued.)

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ADDRESS DELIVERED AT THE ANNUAL GENERAL MEETING OF THE STUDENTS' SOCIETY OF THE DENTAL HOSPITAL OF LONDON.

By ROBERT HALL WOODHOUSE, M.R.C.S., L.D.S. Eng.,

PRESIDENT.

GENTLEMEN,—It is said that farewells ought always to be brief, but as this is the last evening on which I shall preside at your meeting, I cannot refrain from saying a few words before bidding you a final adieu. Our Society has not, I think, during the past year lacked interest for its members, many of whom, it is gratifying to see, attend at no little inconvenience to themselves, as their homes are at a considerable distance from our trysting place. Even if no professional knowledge was gained, and this I feel is far from the case, pleasant evenings are spent with those who ere long may be separated by many leagues of land or sea. I am glad to say that the museum cabinet under consideration at our last annual meeting is now purchased, and what is still more important paid for. A very fair beginning has already been made of specimens. Too great rarity need not, I think, be

coagulum gets dry and hard in the canula, and it can then only be removed either by means of a fine wire, or better still by carefully heating the gold point till the plug is burnt away.

required in selecting suitable objects, and a process of elimination can be well commenced when space begins to fail.

The communications to the Society in the form of papers have been well sustained. That read by Mr. W. A. Turner at our February meeting on "Cleft Palate" was full of interest; the subject was illustrated by many suitable models, to obtain which must have required much skill and labour. Mr. W. Hern at our next meeting gave an exhaustive paper on "Fractures of the Maxillæ," in preparing which his thorough knowledge of anatomy must have aided him considerably. Mr. R. B. Turner in his paper spoke of a boon, of which we cannot over-estimate the value in practice, namely, that of "Anæsthetics." We by their use are enabled to adopt painless dentistry, but for periods often far, far too brief for comfort in operating. "The method of attaching Porcelain Crowns to Roots of Teeth" was carefully described by Mr. W. Harrison, and no paper elicited a more thorough discussion. At the October meeting "The Influence of Civilization on the Teeth" was brought before us by Mr. Butcher. This subject of such great interest in the present day of apparently declining vital forces, was treated in a manner worthy of its importance. I fear few cases are more unwelcome to the Dental Surgeon than those so fully spoken of by Mr. J. M. Ackland in his paper entitled "Some Diseases of the Antrum and their Treatment." Our list was completed by Mr. O. G. Duncan at the December meeting, who, although having a rather uninviting subject to deal with, read a capital paper on "Salivary Calculus."

Besides these gentlemen whose labours produced for us a *pièce de résistance* on each of our evenings, our best thanks are due to those who brought forward so many casual communications and did so much to contribute to the success of our meetings. Last, but by no means least, in the events I have to chronicle is the evening of the 18th inst., which was certainly the guest night of the Students' Society. Although the outer elements were not entirely favorable nearly 200 responded to the invitations sent out. The most nervous of patients could not, I am sure, have feared to visit the hospital on that evening. Such a transformation had taken place that

it really required the Museum of the Odontological Society, and the splendid display of instruments so kindly lent us by the various depôts, to prevent our forgetting the ordinary character of our alma mater. It was most gratifying to see the cordial co-operation of all in contributing towards the success of the evening.

It was with the greatest diffidence that nearly three years ago I entered upon my duties in this chair, and I have since then, I may say, seen quite a fresh generation of students come and go from our hospital. With the notable exception of your worthy secretary, Mr. Newland Pedley, the members of the Students' Society have also changed. How the former members have been scattered may fairly be inferred from the present positions of the late secretaries, Mr. Magor and Mr. Price, the former now practising at Penzance and the latter in Glasgow. Between these two gentlemen nearly all the rest have ranged themselves in the various towns of Great Britain. The sister isle being able to meet her own demands, I do not think any have permanently migrated thither. Many good openings may be found in some of the larger towns of the Colonies, where the profession is much in the same condition as it was in this country before the so-called Dental Movement began, to which we must one and all bow our heads in gratitude. I feel that it is not presumption to say that in no branch of surgery has greater progress been made in the last quarter of a century than in that of Dental surgery. By conservative treatment it may almost seem we try to discountenance mechanical Dentistry, to the uses of which, however, we have after all only too frequently to resort.

You may have heard of the story of a surgeon in the navy who, on meeting an old admiral whose leg he had amputated some years before, said to him, "If I had only known then what I do now you need not have lost your leg." In Dental Surgery similar reflections have no doubt been often made, but we will trust are to be limited to by-gone days.

It would be well for those who are dissatisfied with our present position as Dentists, to take a retrospect of the last thirty or forty years, and see the individual practitioners toiling away without any cohesion in their ranks. Societies for discussing

Dental matters, or associations for watching Dental interests, had no existence. Of current literature bearing on the profession there was none, and but few books had been written compared with the present time, when the Dental library is becoming rapidly enriched. Nor was there, as far as I am aware, any museum in this country, the objects in which bore special reference to Dentistry. Beyond all this, there was scarcely a glimmer of the *esprit de corps* that has since then sprung up, and by its influence done much to improve Dental Surgery and to relieve mankind of an infinity of misery. Claim what we will for ourselves, our position will be defined by the amount of benefit we are able to confer on the public at large. The medical profession has gradually assumed its present high position by these means and these alone, prompted by the self-sacrificing conduct of her members.

Having dipped into the past I will endeavour to look a little ahead. The question of the Dental Surgeon's education has now been placed on a pretty satisfactory basis. No system in the world will ever make men universally good Dentists, special fitness and close application will alone do this. It has been suggested to have a higher Dental degree than that we now possess; this I believe will take remote futurity to see accomplished, even if it ever *is* or were desirable. The possession of additional medical and other degrees is by all means to be encouraged, but a perfected system of instruction in Dental Surgery is that for which we must immediately strive. The formation, or I may say the power to form, a Dental section at the International Medical Congress was, I think, a most substantial proof of what has been doing of late years in this country. The influence of such gatherings must be beneficial both in diffusing knowledge and in promoting a stronger sense of kinship amongst those employed as ourselves throughout the world.

So great appears the range of Dental Surgery that it is most difficult or impossible for any one to be equally perfect in all its branches. The mass of Dentists, as of medical men, will of necessity remain general practitioners. In the

large towns the treatment of such cases as cleft palate or formidable regulation cases will, I think, come under the care of those making them their special study. In America this division is more seen than with ourselves, and I believe with decidedly beneficial results to the patients. Some persons maintain that the Dental Surgeon should be equally conversant with medical science, but how this is to be accomplished in a busy practice is difficult to see. More than a general knowledge cannot, I believe, be maintained, but this certainly is of great importance, both for the patient and the Dentist. An old lady, who wished to know *everything*, attended it is said Faraday's lectures on chemistry at the Royal Institution, and as a result came away with the firm conviction that oxygen was pure gin and hydrogen was gin and water. It is easy, therefore, to attend lectures on a subject, but time and study alone can give a competent knowledge, and will oblige us to confess there is no royal road to learning.

Some carefully worked-out statistics of health given lately in the 'British Medical Journal' tend to show that the duration of life in men after thirty-five years of age, and in women after forty-five years of age, has been shortened during the last half century. The lives of more children are saved, that is, sick children are preserved, who in time become the progenitors of their race, bequeathing doubtless a fearful legacy to the future Dental Surgeon.

Lord Macaulay says that evils are with scarcely an exception old, that which is new is the intelligence which discerns and the humanity which remedies them. This in some measure may be true in respect to diseases of the teeth, which, however, seem an inseparable association, and one of the many penalties of modern civilisation. It is by no means easy to be prepared with satisfactory answers to the anxious inquiries of parents on this subject. But more difficult is it to account for the crowding, disappearance, and irregular positions of teeth in the maxillæ.

The student of Dental Surgery must often be puzzled by the apparently conflicting instructions given him and different theories propounded. In the question of gold foil,

for instance, some maintain the universal benefit of cohesive foil for stopping teeth, others place their entire belief in the non-cohesive form, whilst yet another class of operators say "in medio tutissimi ibimus." To this latter view many are now giving their support, and I must confess that for my own part they have my entire sympathy as to the success of the method in general practice. Durable fillings can doubtless be made by either method; I believe the best results are derived from being able to vary the method according to the wants of any given case. I recently saw some non-cohesive fillings that had only a few months before been placed in a patient's mouth by an old practitioner, who could well remember, I have no doubt, many events when George the Third was king. His birth was in the year prior to the Battle of Trafalgar. This patient wished to have his teeth fitted for foreign service. It would have been very rash for any one to say he could put in more serviceable stoppings than those to which I have alluded, although the operations were, I am quite sure, performed without the aid of rubber dam or any other modern appliances.

From these remarks I should be very sorry for any one to think I underrate in any way the immense aids to good practice that later years have brought us. Operations can now be performed and teeth preserved that in former days it would have been impossible to save. There is one instrument, if, indeed, instrument it can be called, the proper use of which I think is much neglected—I mean the mouth mirror. Pardon me, if in any way I seem pedantic, gentlemen, but I do not think a Dentist can be quite competent to discharge his every duty as such if he is not fully able to work as well and freely by the reflected as by the direct sight of a cavity.

The use of the laryngoscope is the only way by which a large class of operations on the throat can be performed. It is equally essential to have perfect facility in working by a reflected image to effectually save hundreds, and I hope your practice may be large enough to say thousands, of teeth that will come under your care. I speak rather strongly on this point, for I often see cases in which

tooth structure has been needlessly sacrificed to obviate this defect in the operator. To be *au fait* in the efficient use of a mouth mirror will take months to learn with constant practice, but no useful knowledge is acquired without some trouble.

I scarcely think, gentlemen, it is kind to wish you *very* large practices, but I trust you will one and all have sufficient to usefully and pleasantly employ your time with benefit to your patients and profit to yourselves.

Before parting I must congratulate you on your choice of a new president. Mr. Underwood has already proved himself a worthy scion of a name likely to be remembered through many years in the annals of Dentistry. I can only trust he will derive as much pleasure from the position as I feel that I have done.

From the very first time when I commenced the duties which terminate this evening you have one and all treated me with the greatest courtesy. My duties have indeed been quite nominal from the most efficient aid that I have received from the past and present secretaries. I must apologise for detaining you so long, and in conclusion, gentlemen, I wish you every success in the career before you. May you each one catch a favouring breeze, and after a happy sail over the ocean of life, ever steering by the only true chart, that midst storm as well as calm will guide you at last to the haven of perfect rest and happiness.

ON EPULIS.*

By H. A. S. MAHOMED.

MR. PRESIDENT AND GENTLEMEN,—In bringing this subject before you to night, I can scarcely hope to add anything new to the literature of Dental science. I am painfully conscious of the fact that my position at present in

* Read before the Students' Society of the Dental Hospital of London.

our professional world is strictly that of a neophyte. My opportunities of personal observation have been limited, and I must this evening rely less on my own experience than on the recorded knowledge of high authorities.

Epulis is classed with diseases of the bone. The term epulis is usually applied to tumours springing from the margin of the gums whatever their structural character. This term epulis is still giving rise to considerable confusion, as authors continue to apply it to different pathological conditions. As used in the present sense, we understand by it a fibro-plastic tumour which originates in the endosteum or periosteum of the alveolar process, which manifests a strong disposition to return if not thoroughly removed, and which never heals spontaneously though it seldom invades the system by general infection.

The clinical history of all epuloid growths demonstrates the fact that they have a certain relation to the teeth, in the proximity of which they always take their origin. These tumours never occur in jaws which have no teeth, nor in parts of jaws where the teeth have long been removed. When the jaw is devoid of teeth at the site of disease it may be assumed that a root or a loose spicula of bone is buried somewhere in the interior of the mass. Tartar around the base of the teeth has undoubtedly in some instances acted as a cause, and it is only reasonable to presume that the prolonged irritation incidental to the second dentition and the appearance of the last molars has been instrumental in originating the morbid process. It is a well known fact in pathology, that any long continued irritation may so alter the nutrition of normal structures and benign growths as to impart to them a semi-malignant type.

I propose to deal with the two most common varieties, namely, the fibrous and the myeloid.

The simple or fibrous epulis may be described as a firm, immovable, convex, semi-elastic, smooth, and lobulated tumour, of variable size, covered with reddened mucous membrane. At first it is hard like the ordinary structure of the gum, but after a time the growth softens by disintegration and,

ulcerating on the surface, gives off an offensive discharge. The fibrous variety in the early stage appears to be simply a circumscribed and rapidly growing hypertrophy of the gum. As a rule it does not occasion any pain.

The myeloid or giant-celled epulis, described by Wedl as a "fibrous form of cancer arising from bone," and by Otto Weber as "giant-celled sarcoma," is softer and more vascular, consisting of embryonic connective tissue. It is of a pinkish-white colour, and often stained by extravasations of blood; it grows rapidly, and is of a malignant character. This variety is more commonly connected with the interior of the alveolus than the fibrous form; and this fact may possibly account for its being more closely allied to the endosteal than the periosteal structures. Its surface is smooth and uniform, of a dark pinkish-grey mottled with purplish spots. On section it may be traced into the bone, the cut surface being of a more yellow tinge.

Here, perhaps, I ought to mention a form of epulis bearing the characters of epithelioma which may be occasionally met with. Mr. Hutchinson removed one from the lower jaw of a lady aged fifty-five, which had been growing about a year. The surface was covered with healthy mucous membrane. The interior of the tumour was whiter, firmer, and more compact than the surface; there was no line of demarcation between the tumour and its mucous covering. The structure of the growth was glandular, resembling some forms of compact adenoid tumour of the breast. At the point of its attachment a transformation of the glandular into epitheliomatous structure is noticed. In looking at the section the cut ends of the gland tubules may be seen, and close to them are distinct nests of true epithelioma.

Sir William Fergusson records a case in his 'Practical Surgery' which was a more advanced example of the same kind. In this case he sawed through the lower jaw horizontally below the level of the alveolus, but the section not proving healthy, he removed the entire thickness of the jaw in the incisor region, including the second bicuspid on either side. The patient made a good recovery, firm union

took place between the two segments of the jaw, which were pressed firmly together by the action of the muscles.

Epulis originates in an irritated condition of the periosteum and bone. Crushing or splintering produced in extraction in all probability gives rise to it in some instances. But in many cases positive proof of a trauma is difficult to obtain. Carious roots are said to be a frequent predisposing cause.

Epulis may occur at any period, from the second year after birth to old age. It occurs most frequently, however, in young persons, females being apparently more liable to it than males.

Prof. Rust believed that these growths, in some instances, are caused by a general dyscrasia, and in support of this assertion he relates a very singular case that came under his observation. A woman suffered from a sarcomatous epulis during her pregnancy. The tumour was attached to the alveolar processes of the upper jaw; it presented a reddish-blue appearance, and at times gave rise to copious hæmorrhage. Repeated fruitless attempts were made to destroy it by means of the ligature and caustics. Soon after delivery it disappeared spontaneously. It reappeared regularly during four successive pregnancies, and it disappeared promptly after each delivery without treatment, so that the woman began to look upon its appearance as a most reliable indication of her condition.

If the tumour has been allowed to remain, and has attained considerable size, producing a bulging upon the facial surface, and spreading upon the lingual side as well, hæmorrhages easily occur, in consequence of the hyperæmic condition of the veins of the gums, and erosions are produced, which result in ulcers. In the fibrous epulis, if a microscopical examination is made, you find in many instances fibro-plastic cells intermingled. And in some cases spiculæ of bone are prolonged into it from the maxilla. More rarely nodules of bone are developed near the surface of the growth, quite unconnected with the alveolus. In Mr. Tomes' 'Dental Surgery' he says, as regards an isolated piece of bone that Mr. De Morgan met with, entangled

rather than adherent to the fibrous tissue of which the epulis was composed, "that after a careful examination its microscopic character fully justified the assumption that it had once formed portion of the subjacent alveolus, and that its detachment had been effected by absorption; and further, that when so detached it had formed a source of irritation, and thus led to the development of the epulis." But this was not the case in the specimen removed by Mr. Christopher Heath; for here a minute examination showed the ossific matter developed in the fibrous tissue in the most unmistakable manner. Nodules of bone may sometimes be found in the myeloid epulis, but they are not so frequent as in the fibrous variety.

In the treatment of epulis there is but one consideration involved—the necessity of thoroughly removing the diseased parts with the tissues to which they have acquired attachment; and, of course, as this can be done far more satisfactorily when the disease is of small extent and limited to its original seat there should be little delay. Therefore, it is important that the disease be recognised before it has crept, as it is apt to do, irregularly and indefinitely into the surrounding tissues. The removal of the growth may be effected in three ways. First, by excision; second, by caustics; third, by actual cautery. To ensure success it is almost always necessary to remove that part of the alveolar process from which the growth springs; therefore, excision has the first claim in selecting our method of operation. It may be followed by the actual cautery for the double purpose of arresting hæmorrhage and destroying any particles of morbid tissue that may have been overlooked. Prof. Gross speaks very firmly on this point; he says, "I am satisfied that it is worse than useless to temporise with such a malady. The only way is to deal it at once an effectual blow by sawing out a piece of the jaw, embracing its entire thickness and reaching beyond the limits of the morbid mass. I have never known a case in which any other procedure did the least good. In treating epulis we should not lose sight of the fact that it is an affection not so much of the gums of as of the jaws, and therefore anything short of removal of

this at the site of the disease is an absurdity." Now, Mr. Heath is a deal more moderate in the treatment; he says that "only when the growth is of a malignant character can it be necessary to cut through the whole thickness of the jaw, since it has been shown repeatedly that common epulis never involves the base of the bone, and the contour of the face depends so much upon its preservation that it should not be interfered with."

It is essential to remove the periosteum for, as it has been said, the growth is connected with the periosteum, and will be reproduced. The removal may be effected with a chisel or gouge, by which a scale of the alveolus with its covering can be cut away.

Those who object to such treatment may produce the same result by the application of a powerful caustic, destroying the surface of the bone, and causing its exfoliation; but this latter course is attended with some tediousness and inconvenience to the patient. When an epulis is connected with the lining membrane of the socket of a tooth no superficial operation can effect a cure. In a case of this description, the neighbouring teeth although perhaps sound must be sacrificed, and the alveolus cut away with bone forceps. The same treatment is advisable when the disease springs from the posterior plate of the alveolus. In some extreme cases it may be necessary to incise the face, if so, Sir William Fergusson's suggestion and practice should be strictly followed, that is, to restrict the incision to the middle line of the lip; if this does not give sufficient room, carry the incision into the nostril of the affected side, by stretching which so much additional room is gained, rendering any incision at the angle of the mouth unnecessary. When this incision is adhered to, the scar is almost imperceptible except upon a close investigation.

I should like to quote a case or two of epulis showing the extent to which it may grow if allowed to remain untreated.

Perhaps the most remarkable is one of Mr. Liston's. The case was reported in the 'Lancet' of November 5th, 1836.

The patient had laboured under the disease for eight years; she had been subjected to a partial removal of the

growth when it was of inconsiderable size. The tumour was of the fibroid variety. It sprang originally from the gums and sockets of the incisors and canine of the left side; soon it protruded from the mouth, unconfined and uninfluenced by the pressure of the lips. It assumed a most formidable size and appearance, concealed the palate and pharynx, externally it reached nearly as high as the orbits concealing the nose, giving rise to great inconvenience and continued suffering. The surface had been broken by ulceration, but upon close inspection it was found to possess a firm consistence, and to present the same peculiar botryoidal arrangement of its parts as others of a simple and benign nature. It was most unsightly and repulsive looking. The operation was most successful, leaving only the scars in the upper lips which were the result of the previous attempt to remove the disease.

Dr. Kinloch removed an enormous epulis, which distended and protruded from the mouth; the growth appeared to have originated in the alveolus, but to have also involved the superior maxilla. The mass removed weighed nearly two pounds. The patient, a negress, aged twenty-five, made a good recovery.

It only remains now, gentlemen, for me to call your attention to the sections of epulis which I have under the microscopes, for the use of which I have to thank Messrs. Hern and Pillin. Whatever value this paper may be to any of you, I can but acknowledge the patience and courtesy you have accorded it, and I beg to thank this Society for the opportunity it has afforded me of bringing this interesting subject before you.

It is announced by the Hon. Secretary of the Odonto-Chirurgical Society of Scotland, that the Anniversary Dinner of the Licentiates in Dental Surgery, and the Members of the Odonto-Chirurgical Society, will take place on Monday, the 13th March, in the Balmoral Hotel, Princes Street, Edinburgh.

British Journal of Dental Science.

LONDON, MARCH 1, 1882.

STUDENTS' SOCIETIES.

AMONGST the signs which, in the midst of much that is discouraging, augur well for the future of the Dental profession, there is none which is more hopeful than the continued and increasing activity of the various Dental Students' Societies. The papers read before the Students' Society of the Dental Hospital of London, which we have the pleasure of publishing from time to time, together with other matters of interest brought before that body, show an earnestness of purpose and a measure of real scientific interest which will compare well with the record of similar societies in other professions—not to speak of that profession to which we are bound by more immediate ties. And we believe that the Students' Societies in connection with the National Dental Hospital and the Glasgow Dental School are also worthily fulfilling their functions, while the annual record of the analogous society at Berlin is one of which any body of young men might feel proud. Such associations cannot of course come into competition for a moment with the adult societies. Their function is indeed a totally different one, and our students would be just as injudicious in attempting to vie with their seniors, as the latter would be in taking up the rôle of the juniors. It is easy to be enthusiastic about the advances which the pioneers of Dental science are daily making into the undiscovered country before them, and there is always a great temptation—even for those who do not encourage an Athenian love of novelty—to estimate the vitality of a branch of knowledge solely by its record of original research. But it must not be forgotten that in our science at any rate a broad base of knowledge is quite as important if not more

important than a lofty apex. We may perhaps go further and say that the former is a pre-requisite of the latter. The history of other sciences indeed teaches us that a wide general culture is a necessary condition of individual advance, and that it is as true of the army of science as it is of other armies, that the scouts cannot safely penetrate far in front of the main column.

We have thus always attached the very greatest importance to all those agencies in the profession which have the object of consolidating and popularising the common and accepted store of knowledge. Of these the Students' Society is undoubtedly one of the most efficacious. Scientific books and papers in the Dental journals play naturally a valuable rôle. Between them they provide the student with all that is necessary for his scientific sustenance. But Students' Societies go further. They not only give a man to eat; they also help him to digest. The scientific provender they provide is like peptonised food assimilable without effort. Nothing, indeed, leads more easily to permanency and accuracy of knowledge than the formulation and criticism which discussion before a society necessitates. Every debate is as fruitful a study in black and white as a written examination, one of which, indeed, often teaches as much as a score of lectures. But public discussion not only often teaches better and more easily than lectures; it also teaches things which lectures and all the other paraphernalia of education cannot teach. To quote a recent address by Professor Cleland on "Medical Students' Societies" (see 'Glasgow Medical Journal,' February, 1882), debating provides "a means of improvement wholly different from listening to lectures, calculated to develop judgment and self-reliance, qualities without which mere book knowledge and the dicta of teachers, nay, even the industrious exercise of eye and ear at the bedside, will be of little use in after life."

If such are the advantages derived from simple discussion, it can be easily imagined how great is the benefit derived from the preparation of a paper on a chosen subject. Dr. Cleland has admirably described the process. "You fix

your thought on a subject; you set your brains to work to find out what is to be said on one side or other, or what novel views may be held about it. You note the references in the books which you first consult, look up the authorities referred to, find other references in them, and discover quickly that you have a totally different idea of the literature of the subject from what you had when you began, and that you have made progress in the art of learning what has been done in any subject." This is a very different mode of study from the unfruitful cramming, which is the sole idea that the majority of medical, and we fear too large a proportion of Dental students have of self culture. The student may have an excellent manual on the subject he is working at, and he may do all that is in his power to make himself master of it, but he still remains open to the old reproach of being "*homo unius libri*." It is for their tendency to counteract this evil and to give their members a power of thoughtful criticism and a wide culture that the Students' Society deserves the cordial, but not too paternal, encouragement of the authorities of our Dental Schools.

THE deans, lecturers, and demonstrators at our Dental schools are to have a chance of distinguishing themselves. M. Jules Ferry has deputed Dr. Galippe, the superintendent of the laboratory at the Paris Faculty of Medicine, to visit England in order to report on the teaching of Dentistry in this country. Let us hope that the aforesaid deans, &c., will be able to convince M. Galippe that this is one of the matters they don't order better in France.

WHEN we last wrote on this subject the prospects of Dental legislature in France were in the shade. Much, however, has happened since then. The Gambetta ministry has come and gone, and the wheel of politics has again brought M. Jules Ferry, among others, to the top. Now, fortunately, one of M. Ferry's favourite ideas—may we say

one of his hobbies?—is to legislate for the Dentists. The appointment of M. Galippe is an earnest that among his other cares M. Ferry still keeps a watchful eye on his countrymen's teeth and their custodians. "Quis custodiet ipsos custodes?" is the question M. Ferry wants to solve, and every one but the quacks will wish him success.

THE new edition of our charter—the Dentists' Register for 1882—may now be obtained from the office of the General Medical Council, together with its elder and more bulky brother the Medical Register. In the case of each the reader will turn at once to the page of interesting statistics, the active principles, so to speak, which the registrar has succeeded by a long and arduous process in extracting from the immense mass of raw material contained in the succeeding pages. It is interesting to compare the statistics which he now presents with those contained in last year's Dentists' Register. The number of Dental practitioners on the new Register is 5345, or 79 more than last year; the number of Dental licentiates is 698 as compared with 565 in the Register of 1881. The percentage of Dental licentiates is thus 13·06 now against 10·74 last year.

THE greater part of this increase is evidently due to the somewhat generous bestowal of Irish licences during the year. Thus, while the English licences have only increased by 11, the Edinburgh licences by 6, and the Glasgow by 15, the number of registered practitioners entitled to add to their names the letters L.D.S.I. has increased from 177 to 278. And it is certain, moreover, that these figures do not fully represent the total number of Dental licences added to the roll of the Irish College during the past year. For apart from the fact that the only pass list out of four which we have had the opportunity of publishing in these pages during the past twelve months contained more names than the total increase for the year recorded in the registrar's statistics, the

number of Irish licences recorded in the 'Medical Directory' is 33 more than the number entered in the Dentists' Register. It is only fair to state, however, that the same remark applies to the licences of the other colleges, the total number of registered licences (698) being over a hundred less than the number of names on the Dental licentiates list in the Medical Directory. The question that occurs to one is—Why on earth do men take licences if they do not care to register them?

WE have already given informal statistics of the surgical qualifications in the Register, but may add that the Register states that during the past year such qualifications have been registered by fifty-eight practitioners, thirty-eight of whom possess the Dental licence in addition. The foreign diplomas in the Register have only increased by one during the year. The Student's Register, on the other hand, has run up from 81 to 121, though we could well wish that the increase had been at least twice as great.

WE have received several communications on the threatened prosecution under the Dentists' Act, to which we alluded in our last issue. While the case is still *sub judice* we are precluded from discussing its merits, and herein fortunately duty coincides with inclination. The charge is to be made in a court of law, and there it must be met. All that has hitherto appeared in these pages, and all that will appear until the case has been settled or withdrawn, will have reference solely to the expediency of instituting such prosecutions. To discuss the question on broad principles, and without special reference to the pending case, there are three conceivable methods by which, the advisability of prosecution being conceded, such prosecution might be instituted. The first, and the worst, is that adopted in the present case, prosecution by a private individual with the permission of the Medical Council; the second is, prosecution by an association, also with the permission of the Medical Council; the third, and in our view the only unobjectionable method is

prosecution by the public prosecutor at the instance of the General Medical Council or one of its branches, as provided for by Section 4 of the Dentists' Act.

UNDER that section associations are placed in exactly the same position as private individuals, and can only prosecute by the permission of the Medical Council, a permission, however, which is apparently to be obtained for the asking. Now, we really trust that the leaders of the British Dental Association will pause and consider the question well in all its bearings before they sue for such permission. If they wish, as they must do, to keep their profession clear of all suspicion of trade, and to gain the respect of their sister professions, they will take care how they implicate themselves in legal struggles. However disinterested their aim, howsoever far above suspicion their motives, the verdict of an ungrateful public will be the same, and they will with difficulty escape from the charge that under the plea of protecting the public they have aimed at protecting their own class. We hope they will not only decide not to prosecute on behalf of the Association, but will also take care that the Council does not give its permission to doubtful prosecutions by individuals. Nothing will damn the profession more in the eyes of the public than a series of *pot v. kettle* prosecutions.

WE hear that the statement that no applications for election to the membership of the Odontological Society from practitioners who are not also Dental licentiates would be received after the March meeting of the Society is incorrect, the Council having decided at its last meeting that such applications should be received as late as next November 1st.

THE Representative Board of the British Dental Association have fixed Friday and Saturday, August 25th and 26th, as the days for holding the annual meeting at Liverpool.

The Dental Examiner.

[*Note.*—Dental materials and appliances intended for notice in the “Dental Examiner” should be sent to the Editor at 11, New Burlington Street, W. All preparations not generally known should be accompanied by a lucid description and a clear statement of their composition. The formulæ supplied *will not be published* unless a written permission is given by the maker.]

C. ASH & SONS' DENTAL RUBBERS (*concluded*).

BEFORE dismissing the ordinary coloured rubbers we wish to add a few lines to what has already appeared. The two rubbers called ordinary, and marked in my list 13 and 14, are not so strong as their close texture and high polish would lead one to imagine. The first of the two tears at a weight of four pounds, and the second snaps at three; indeed, they compare unfavorably with the three cheap rubbers, the orange, red, and brown, all of which will stand from four to five pounds if vulcanised at a temperature not higher than 310°. We have also to speak most favorably of another remarkably strong brown rubber called W, and introduced by Messrs. Ash in imitation of a vulcanite called “Webber’s.” It only runs twenty-one sheets to the pound, but will not snap under the severest test, only bending at a weight of seven pounds, and even then not showing any sign of fracture.

We now desire, in conclusion, to direct attention to the pink rubbers manufactured by this well-known firm, most of which are very beautiful in colour after being bleached in spirits, and are also capable of taking a very high polish. In the list which accompanies this paper I have followed Messrs. Ash’s classification, adding a number to each preparation. The particulars here given are the results of numerous trials, and represent the labours of many experiments. We do not vouch that some little difference may not be observable by other practitioners, but we believe in the main these statements are thoroughly reliable facts. We are aware that many Dentists employing very small vulcanisers

take a much shorter time in hardening their rubbers, but we have only to repeat what we have before urged, that the lower the temperature and the longer the time in hardening the better the results. Even with thick pieces porosity is less likely the larger the apparatus, and, as every one should know, all the pinks have incorporated in them so much colouring matter that they seldom bubble; but they are not suitable to be used for dentures by themselves, they are much better when used only as coverings. No. 1, the improved pink, can be bleached until it becomes at least a very beautiful colour, if not a resemblance to the natural gum, for we are bound to acknowledge that none of the pinks can be made to equal a mineral or a celluloid gum. No. 2, the no vermilion rubber, is very pale and stronger than any of the other varieties. It does not break even at a weight of seven pounds, but it is much too pliable to be used by itself. No. 3, called x 1, is a fairly strong rubber, but No. 4 and No. 5, both of which are very pale in colour, should never be used under any circumstances by themselves unless they can be left at least one eighth of an inch in thickness. No. 6, the strong pink, or S. P. as it is called, we do not regard as a strong rubber; when vulcanised for one hour and a half at a temperature of 315° (and it is not done too much at that heat) it will not stand more than two pounds weight, and the same remarks apply to No. 7, white rubber, very improperly but frequently used for blocks. Whenever white blocks are desired only the faces should be coated with No. 7, as it has very little wear in it, and is also exceedingly brittle. Perhaps the handsomest pink yet introduced is No. 19, called in Messrs. Ash's list No. 1 and No. 1 x, extra thin. It is a beautiful colour, vulcanises at 310° one hour and a half, but is inclined to be brittle.

Of the soft rubbers we can say but little, for we disapprove of them altogether, as we consider perfect rigidity essential to comfort in artificial teeth. The vela for the manufacture of artificial palates has its great uses, but the ordinary and the soft pink for the lining of plates are quite unnecessary, and in our opinion have a tendency to make mouths sensitive and not to relieve them.

C. Ash and Sons' Dental Rubbers.

No.	Name.	Colour.	Sheets to pound.	Harden at	Time.	Relative strength.	Remarks.
1	Improved pink	Dark pink	21	310°	1 h. 20 m.	1½	Very friable.
2	N.V. (no vermilion)	Very light pink	22	310°	1 h. 20 m.	2 to 7	Very pliable, but tough; does not break, but bends easily.
3	Pink, 1x.	Deep	19	310°	1 h. 20 m.	3	Very weak.
4	Pink, No. 1	Pale	23	310°	1 h. 20 m.	1½	Very friable.
5	Pink, No. 2	Very pale	21	310°	1 h. 20 m.	1½	No stronger than No. 3.
6	S.P. (strong pink)	Pinkish brown	21	315°	1 h. 30 m.	2 to 3	
7	White	Bluish white	19	310°	1 h. 20 m.	2	Does not break, but bends to right angles.
8	Child's, G.	Bright red	23	315°	1 h. 30 m.	4	Tears at 4 lbs. Very elastic.
9	A. E. (elastic American)	Dark red	26	310°	1 h. 20 m.	4	
10	W. (Webber's)	Light brown	21	310°	1 h. 20 m.	9	As strong as black.
11	Whalebone, No. 1	Light brown	25	310°	1 h. 20 m.	9	As strong as black.
12	Whalebone, No. 2	Red	24	310°	1 h. 20 m.	7	Not quite so strong as No. 11.
13	Ordinary, No. 1	Red	22	315°	2 h.	4	Friable at angle of bend.
14	Ordinary, No. 2	Brown	22	315°	2 h.	3	Breaks at 3 lbs.
15	Orange	Orange	22	310°	1 h. 30 m.	4 } 4 }	
16	Red	Red	22	310°	1 h. 30 m.	5 }	
17	Brown	Brown	22	310°	1 h. 30 m.	9	Good quality, and all remarkably cheap.
18	Black	Black	30	315°	1 h. 30 m.	4	The strongest rubber made.
18A	Improved black	Negro black	27	315°	1 h. 30 m.	9	Friable, tears at angle.
19	Pink	Salmon pink	20	310°	1 h. 20 m.	1½	Very brittle, but of beautiful colour.

Special Article.

A BIRD'S-EYE VIEW OF THE ODONTOLOGICAL SOCIETY'S MUSEUM.

[THIRD ARTICLE.]

"ABNORMALITIES in Size and Form." This series, admirably displayed in the new gallery cases, might possibly be called a "tooth series," as it consists of teeth in almost every abnormal and pathological condition, and is one that ought to be viewed to be thoroughly appreciated; space will not, however, permit of a lengthy description, although each specimen is worthy of a few words. We come, first of all, to upper molars of every imaginable shape and size, a good many possessing four roots. We then pass on to lower molars; these, if possible, are still more curious in shape, and seem to totally ignore the fact that they are supposed to have two roots, for in one case, No. 31, five well-marked fangs are visible, whilst a good many only possess one. Molars with three and four roots are also well represented.

In the bicuspid we must stop for a moment to examine No. 44, three slides of bifurcated lower bicuspid, amongst which are some of the best in existence. Some excellent specimens of three-rooted superior bicuspid are also to be seen. Nos. 52, 53, and 55 are interesting, showing some good bifurcated permanent canines, and No. 54 presents the same condition in the temporary set. No. 60 is worthy of attention, showing some very remarkable incisors, both in shape and size. No. 61, a portion of an alveolar arch with the incisors and canines in position, shows some of the largest teeth to be found, and for the opposite extreme we must turn to Nos. 64 and 65, which are probably the smallest teeth exhibited.

In "Gemination," No. 80 shows the best specimens of superior incisors, and Nos. 82, 83, and 95, the best of the permanent lower incisors, whilst Nos. 84 and 85 are the most interesting of this abnormality in the temporary set. No. 118 shows a very extensive exostosis on a lower molar, and No. 120 is an exostosis on a bicuspid taking the form of a spine projecting at right angles to the root.

Under the head of "Absorption," we cannot do better

than look at No. 156, an upper molar, the fang of which has been partly absorbed in consequence of the irritation caused by a bristle having passed out of the pulp cavity through the apical foramen. No. 157 is also interesting as it shows absorption having gone on after the root had been filled with gold. No. 168 exhibits several pivoted teeth, the roots of which are partly removed by absorption, and Nos. 188 and 189 display the calcification of the pulp behind amalgam fillings.

The next subdivision of this section, although small, is one of the most valuable portions of the Museum, viz. "Odontomes," both human and comparative, and a few words must be said regarding each specimen. No. 198 is an immense odontome springing from an elephant's tusk, and probably the largest specimen of its kind to be found. No. 199 is a large odontome springing from the molar tooth of a horse, and weighing upwards of ten ounces. The great bulk of the mass is in front of the tooth, although a portion extends over the outside. Looking down on the surface worn by mastication we see the crown of the tooth, with the complex pattern of a horse's lower molar, quite unaltered. No. 200 is a wax model of an odontome which is in the Museum of the Royal College of Surgeons (No. 1022). It is a large mass springing from the neck of a lower molar. No. 201 is an enormous odontome springing from an upper molar. This specimen was in the Museum for some years without being classified, until, in 1863, Mr. C. S. Tomes determined to find out the exact nature of the mass, as there had arisen some conflicting discussions as to its pathological condition. He made some sections, and after careful examination came to the conclusion that it came under the head of "Odontome Radiculaire Dentinaire," of Broca; that is to say, a tooth tumour resulting from an outgrowth from the formative dental pulp, at a period when the fangs were already in great part complete. No. 202 is an incisor, to the front of which is attached an irregular mass as large as itself. This is a radicular odontome of the simplest form, resulting from hypertrophied dilated condition of the root. No. 204 shows some very good enamel nodules. No. 206 is a slice from a very large odontome, removed by Mr. Christopher Heath last year; it is of unusual size, the mass itself measuring one inch and a half by one and a quarter, and weighing 315 grains.

"Teeth irregularly united" is another very interesting section, and Nos. 214—218 are perhaps the best as regards simple union. We also see teeth with smaller imperfectly developed denticles attached to them, as at Nos. 207, 208,

and 210. No. 222 is worth studying; it is a second molar and dens sapientiæ united by the apices of their roots, the latter being inverted.

Amongst the "Salivary Calculi," No. 249 must be mentioned; it is an enormous mass of tartar accumulated around a bone piece, which carries four lower incisors; the canine and two bicuspid of the right side are included in the mass. No. 257 is a salivary calculus removed from the submaxillary duct. It had existed for some time without causing any trouble, and it was only about five or six hours previous to its removal that it caused severe pain and the mouth became inflamed; it was easily removed by the finger, and weighed thirty grains.

"Effects of Injury Inflicted on the Pulp Cavity." The four specimens under this head are comparative specimens, the first two being tusks of hippopotami which have grown into complete circles, the point having entered the persistent pulp cavity, and so caused the death of the pulp. No. 259 is another hippopotamus tusk, but it has not quite completed the circle, so the pulp cavity is uninjured. In No. 259* we see a number of teeth of the rodent order more or less grown into circles.

"Injuries and Diseases of the Jaws." The first specimen of interest is No. 1, a lower model. The jaw was fractured through a gun shot, and the portion of the bone between the second bicuspid on the right side and canine on the left was entirely lost; the fracture was only united by fibrous bands. No. 24, upper and lower models, showing great hypertrophy of alveolus. This patient was a gentleman, aged about forty, who had resided for some years in Bombay. The enlargement was strictly confined to the alveolar portion of both upper and lower jaws. The finger could be passed on the upper jaw back to a considerable extent so as to reach the base of the nose and also behind the projections on the palate. The base of the lower jaw was of unusual size, whilst the alveolar portion projected very considerably both anteriorly and posteriorly. It is interesting to note that the son of the patient was suffering in the same way at the time the casts were taken. No. 27 is a good specimen of hyperostosis in the sup. max. of a human subject. The right side is more affected than the left, the cavity of the antrum of the former being entirely filled with osseous matter, whilst the latter is only partly full. No. 29 is a specimen of the same disease in the skull of a monkey, all the bones being more or less affected. No. 31 upper and lower model of the jaws of Juliana Pastrana. This is a case of extensive hypertrophy of the gums and alveoli, and is probably well known

to every practitioner. Nos. 89 and 90 show two very good specimens of phosphorus necrosis; the latter having been removed *post mortem*. No. 92 presents a very extensive necrosis. The peculiarity of this case is the absence of any assignable cause for the necrosis; no history of syphilis or other constitutional taint could be elicited, nor had any injury been inflicted on the mouth. The patient had been for some time in hot climates, and was perhaps enfeebled by this cause, but the necrosis was apparently quite spontaneous. No. 96 is also worth viewing; it shows the alveolar process of the upper jaw with one of the deciduous molars and the crowns of the two bicuspid *in situ*; also the alveolar process of the lower jaw with one deciduous molar *in situ*, exfoliated in a boy who had phagedæna oris, when convalescent after fever, and who eventually recovered perfect health.—W. W.

Reports of Societies.

STUDENTS' SOCIETY OF THE DENTAL HOSPITAL OF LONDON.

ANNUAL GENERAL MEETING, JANUARY 30TH, 1882.

ROBERT HALL WOODHOUSE, Esq., M.R.C.S., L.D.S., President,
in the Chair.

THE minutes of the previous meeting were read over and confirmed.

Mr. Ayres was balloted for and elected a member of the Society.

Casual communications were brought forward by Messrs. H. L. Albert and H. G. Read.

The Treasurer (Mr. C. Robbins, L.D.S.) then read his report, the accounts having been audited by Messrs. G. D. Curnock, L.D.S., and H. G. Read, and found correct; the report was unanimously approved of.

Mr. W. Harrison (Hon. Sec.) read the report of the accounts of the *conversazione*, which showed that the expenses reached £35 1s, to cover which the President gave £9 9s., Dr. Walker £5, Mr. F. N. Pedley £3 15s., and the Council and Members £16 17s.

Mr. F. Newland Pedley, M.R.C.S., L.D.S. (Hon. Sec.), then read the Council's report, in which he referred to the successful *conversazione* held on January 18th, also to the establishment of the Society's Museum, in which several valuable specimens had already been deposited. The report was unanimously received.

It was unanimously resolved "that a vote of thanks be accorded to the Editor of the 'British Journal of Dental Science' for his continued kindness in publishing and reprinting the Society's Transactions, which he presents to every member of the Society, together with two fortnightly copies of his valuable journal." "Also to the Editors of the 'British Dental Association Journal' and 'Dental Record,' for copies of their excellent journals kindly given to the Society's library.

The Council proposed the following gentlemen as office-bearers for 1882, who were duly elected:

President.—Mr. Arthur S. Underwood, M.R.C.S., L.D.S.

Vice-Presidents.—Mr. C. E. Truman, M.A., M.R.C.S., L.D.S., Mr. C. Robins, L.D.S. Eng.

Treasurer.—Mr. W. Hern, L.D.S. Eng.

Honorary Secretaries.—Mr. F. Newland Pedley, M.R.C.S., L.D.S. (Council), Mr. Walter Harrison (Society).

Council (2nd year).—Messrs. J. M. Ackland, C. S. Buckland, J. O. Butcher, H. J. Gould, and A. H. Tester. (1st year).—Messrs. A. M. Fox, G. Hooper, E. Latchmore, and A. C. Woodhouse.

The President then called on Mr. H. A. S. Mahomed for his paper on "Epulis," which will be found in another part of the present journal.

A discussion followed in which the President, Messrs. W. Hern, L.D.S., H. G. Read, and H. L. Albert took part.

The President then delivered his valedictory address, as published in another page of this journal.

Mr. F. Newland Pedley, M.R.C.S., L.D.S., and Mr. C. Robbins, L.D.S., replied.

Mr. J. J. Andrew proposed and Mr. C. Robbins seconded a hearty vote of thanks to the retiring President, which was carried with much applause.

THE deaths of Dr. M. S. Dean, of Chicago, a name well known to all Dental readers, and of Dr. Vincenzo Martini, of Turin, are announced.

Literary Notices and Selections.

IMPURE CHLOROFORM.

A VERY interesting discussion on this subject has recently been held by the Société de Chirurgie of Paris. It was opened by M. Lucas-Championnière, who called attention to one of the causes, if not the principal cause, of the want of success which surgeons have met with of late years in chloroformisation, and also of the accidents which it produces. This cause is the impurity of the liquid. In this matter he is of opinion that experimenting with chloroform upon animals is of no use (and especially on the dog), as the effects produced are nowise comparable with those observed in man. The human economy in general bears chloroform very well, although now and then we meet with individuals who resist its influence. With pure chloroform we may eventually overcome these; but if it is bad, and we continue the inhalations, death may ensue. When at the Maternité, M. Lucas found that with certain kinds of chloroform the semi-anæsthesia suitable for women in labour could not be obtained without employing doses capable of producing complete anæsthesia; and in private practice, when he had forgotten to take his own chloroform with him, he found that enormous quantities (100, 150, or even 200 grammes) of that purchased of *pharmaciens* were required. Whether in midwifery practice or in operations he has often found dangerous symptoms produced, and the chloroform in such cases has not had the sweet odour of the genuine article, although the nature of the impurity has not been discoverable. Many surgeons have declared to M. Lucas that accidents are of much greater frequency now, and this they agree in attributing to the bad quality of the chloroform. Such accidents, however, may be in part attributable to the too rapid and sudden administration of the chloroform

which is best given slowly, allowing the susceptibility of the patient, so to say, to be felt for. Chloroform is now manufactured in large quantities, and, owing to the tax on ordinary alcohol, the methylic is employed. This is the chloroform now exclusively supplied to the *pharmaciens* of Paris, who afterwards purify it more or less. Chloroform, purified and tested by M. Yvon's process (to be presently noticed), exhales a much pleasanter odour, and acts much more promptly and completely, and in infinitely smaller doses, than the ordinary chloroform, while its employment is attended with far fewer accidents. M. Berger, of La Charité, observed that he had for some time past found that the chloroform supplied to the hospitals was changed in its physical characters, no longer possessing the well-known sweet and penetrating odour, and causing, when inhaled, an irritating sensation analogous to that caused by the vapours of acetic acid. Another sign of bad chloroform is that it leaves on the compress, after its evaporation, a brownish or greyish circular stain, indicative of fatty matters in the liquid. When this chloroform is used the patient resists the inhalation for a much longer time, and more violently, than when a pure article is employed. The respiration becomes slower, so that there may be only five or six inspirations in the minute. The establishment of anæsthesia is long and difficult, and the patient becomes purple or cyanosed. The veins of the face and neck are turgescient, and the pulsations of the jugular veins are very sensible. In one word, true asphyxia is produced by the stagnation and overcharge of venous blood in the right heart. It need not be said that such a state is one of most serious danger, for it leads to secondary syncope, which may become rapidly fatal. With impure chloroform, M. Berger states that this change in the respiratory type is of constant occurrence; and such impurity is not detectable by chemical analysis, but is always indicated by the irritating odour of acetic acid. Notwithstanding all the pains taken at the hospitals to supply pure chloroform, this is often very far from being in that condition, owing to the large quantities kept for use, which become deteriorated by the action of light and air. M. Berger has almost always

been able to induce regular anæsthesia by the chloroform purchased of the *pharmaciens*, and has never known it to produce any alarming accidents. M. Maurice Perrin has been much struck with the great deterioration of the chloroform employed at the present time compared with that of an earlier period, which he attributes to various modifications in the preparation of the liquid on a large scale. Its action is now more slow and irregular, and is much oftener than formerly attended by alternations of excitement and collapse, and followed by nausea and vomiting. The small pulse and chills constitute a pathological condition which can only be attributed to the chloroform. The sweet apple flavour of the chloroform also has been exchanged for a very disagreeable empyreumatic odour. But samples of the same chloroform which give rise to the above results, after they have been rectified, will induce anæsthesia on the selfsame patients in the most regular manner. But while agreeing that so many of the accidents and irregularities of chloroformisation are due to the impurity of the agent employed, M. Perrin cannot admit that death may not result under the use of the purest article employed in the most able manner. This he does not believe to be due to the absorption of an excessive quantity of the vapour, but to primary or secondary cardiac symptoms, which it is impossible to foresee or prevent, however skilful the operator may be. This, he thinks, should be widely known in reference to the legal responsibility of surgeons. M. Perrin is of opinion that it is very important to employ freshly prepared chloroform, and that this should be kept (but for a short a time as possible) in blackened bottles secure from the action of light and air. With respect to the treatment of the accidents produced by chloroform, he believes that artificial respiration by the method of Martini, of Florence, which is very simple, furnishes the best results.

Some of the speakers denied the bad effects said to be produced by the chloroform used in the Paris hospitals; and M. Desprès especially drew attention to the few deaths that had occurred during the long period it had been in use. He thinks the question of its purity has been much exag-

gerated, and any ill effects are rather the result of individual susceptibility or bad administration of the chloroform. He believes that the greater proportionate number of deaths which occur from its use in England is due to the enormous massive doses employed by the English surgeons. M. Tillaux is also desirous that no needless alarm should be excited with respect to chloroform; for, like M. Desprès, he has for a long time past constantly employed the hospital chloroform without ever meeting with a serious accident, and, as far as he has observed, the chloroform of the present time is very much what it used to be. Now, as formerly, some patients are readily influenced by it, and others are so with difficulty; some exhibit great congestion, and others do not; and the same with vomiting. All these inconveniences and accidents depend as much upon individual predisposition and mode of administration as upon the chloroform employed. Prof. Le Fort, while admitting that serious asphyxia or death may not result from the use of the hospital chloroform, maintained that, owing to the changes which take place in it while stored away in large quantities, it undergoes alterations which deteriorate its quality, so that vomiting and nausea are much oftener produced than by the chloroform of the *pharmaciens*. To obviate these inconveniences, he proposes the adoption of a procedure which has long been known, and which answered perfectly during the late war. This is the keeping the chloroform for use in slender tubes, hermetically sealed, and containing from twenty to thirty centigrammes per tube. The chloroform remains quite unchanged and unchangeable in the tube until the surgeon is ready to use it. Prof. Le Fort has a tube which was charged with chloroform in 1849, and which he has no doubt would be found perfectly pure.

In the 'Progrès Medical' of December 31st, Dr. Yvon refers to certain tests of the purity of chloroform published some time since by Prof. Regnaud, which the surgeon may resort to himself. These are:—1. The sweet odour of the chloroform. 2. It should not redden litmus paper. 3. It should give no precipitate, nor even produce turbidity, when shaken with a solution of nitrate of silver. 4. It should not

become coloured when carried to a boiling point with concentrated solution of caustic potash. 5. Sulphuric acid should not be blackened when brought in contact with chloroform. Other tests can only be practised by the chemist, such as the determination of the density and boiling-point; but Prof. Regnault states that no chloroform can be regarded as pure which does not satisfy the above-named conditions. But, however pure chloroform may be, it is continually in danger of undergoing spontaneous changes, so that its purity requires verification from time to time; and when it is kept in a bottle incompletely filled, more or less imperfectly corked and exposed to the light, this is soon diminished. For the detection of the changed condition, even before it becomes dangerous, M. Yvon employs, as a test, permanganate of potash one part, caustic potash ten parts, and distilled water 300 parts by weight, which form a solution of a beautiful violet red. This, brought into contact with chloroform that has been rectified, does not change colour; but if the rectification has been incomplete, it is more or less rapidly reduced, its reduction being preceded by a change of colour to green. This permanganate in solution, therefore, supplies the *pharmacien* with a most delicate and rapid test of the purity of the chloroform furnished to him, and employed from time to time, ascertains whether the original purity is still maintained.—*Medical Times and Gazette*.

DEATHS FROM CHLOROFORM.

DEATHS under chloroform are again recurring with distressing frequency. An inquest was held at Malvern Wells on January 28th, on the body of Charles Nelines, aged fifty-one, who died while under chloroform. It appeared that deceased had sustained a dislocation of the shoulder; and he waited upon Mr. Haynes, surgeon, who attempted to reduce it by ordinary means, but failed to do so. Mr. Haynes then

decided to administer chloroform ; but, before doing so, he examined deceased's heart, but could detect nothing which should prevent him from administering chloroform. He accordingly gave the deceased small doses. Soon afterwards, deceased's legs became convulsed, and he held them ; but death took place in a very short time. Dr. Pike and others said they should have acted precisely as Mr. Haynes had done. In cities and towns it was easy to get a medical man to assist in administering chloroform, but it was different in the country. The quantity administered was not excessive. Mr. Brown, surgeon, who made a post-mortem examination, said that deceased was in such a state of health that he might have died at any moment. The jury returned a verdict of "Died from natural causes, accelerated by chloroform judiciously and properly administered ;" but some of the jury deprecated the practice of the profession in putting persons under the influence of chloroform "single-handed. A case is also reported of Mr. T. Fenton, of Broughty Ferry, near Dundee, who was about to undergo an operation for sympathetic ophthalmia. "Two medical gentlemen attended from Dundee, and Mr. Fenton was put under the influence of chloroform, but it had not been administered many minutes before he died." We should be glad to have medical details. A third case occurred at the Royal Free Hospital on January 29th. The patient, a man about fifty years of age, applied at the hospital for dislocation of the shoulder. He appeared to be in fairly good health, the heart-sounds were healthy, and altogether there was nothing to raise any suspicion. Chloroform was administered in the usual way, and nothing at all unusual was noticed until the convulsive stage was reached ; then, without any warning, breathing suddenly ceased, and it was found that the heart also had stopped ; efforts at restoration were without avail. The post-mortem examination revealed no visible lesion, but microscopical examination of the heart showed that the muscular fibres were extensively degenerated. The verdict returned at the inquest was, "Death from misadventure." The action of chloroform on the heart has never yet been fully worked out, but there can be no doubt that it in some

way depresses cardiac activity; and this depression must, no doubt, make itself especially felt where the muscular substance of the heart is itself degenerated; it is interesting to note, in this case, that death occurred during the convulsive period—that is, during the time when violent muscular effort threw an extra strain on a heart already doubly weakened; it is very frequently at this moment that death occurs.—*British Medical Journal*.

UNITING GOLD TO AMALGAM IN TOOTH FILLING.

DR. N. W. KINGSLEY, of New York, recently read a paper on this subject before the New York Odontological Society. I would like to refer, he said, to a use I have been making of amalgam for several years, and which I reported to the State Society some four or five years ago. I advocated at that time that in many instances of large cavities on approximal surfaces—of bicuspid and molars particularly—they should be partly filled with amalgam, to be followed at the same sitting with gold, carrying out the filling to the grinding surface of the tooth, if one desired to avoid a full amalgam filling. Without going into a lengthy discussion of the arguments in favour, or the objections that might be offered, let me say that I have seen a great many of those fillings, and have watched them with much solicitude and anxiety, but I have never seen a single instance where there has been any recurrence of decay at the cervical edge of the cavity. In nearly every case that I have seen, I have found the amalgam discoloured on the surface, but the gold as bright as any gold filling, and the tooth preserved perfectly from further decay. I have been querying, why this result; whether it was attributable entirely to the fact that with the amalgam I got perhaps a closer adaptation to the cervical edge of the cavity than I would with gold, or whether it was owing to some galvanic condition of the different metals in

contact, or what? But this I do know, that sooner or later the majority of operations, under like circumstances, when made with gold, are giving out at that portion of the cavity, no matter by whom they are made. I say a majority, not because I have had an opportunity of examining all the fillings made by every operator, but because I am constantly seeing the work of the most skilful operators in gold giving out at a point referred to within a few years. There is not a Dentist who is not seeing this almost daily, and among his own patients, if he would but have the candour to admit it. I have been puzzled for an explanation of the success where amalgam has been used in this manner. There is no evidence of shrinkage of the amalgam that is placed in the upper part of the cavity. Whatever amalgam may do under other circumstances, that amalgam shows no shrinkage after it is put in. It remains perfectly tight, and the tooth does not discolour in contact with it. In filling a tooth in this way, the amalgam occupies a third or a half of the cavity, and the gold is immediately forced into it. For some little time the gold will absorb the mercury and take up all the excess. After that ceases, the gold shows its true gold appearance, and unites or welds in the usual way. The filling can be finished as the gold is packed. The amalgam will be found sufficiently hard to be finished up to the cervical edge. We see here two results: one is that the gold has taken up all the excess of the mercury that can possibly be taken from the mass of amalgam, preventing the possibility of shrinkage; and, secondly, such a filling is in a better condition to make a perfect flush edge at the cervical border. There is little or no risk of the difficulty, so often found with gold fillings, of the filling standing out and forming a lodgment for foreign matters, which will end in decay, because the amalgam has not become so hard but that it can be easily brought flush with the body of the tooth. This may be the explanation of the results that I believe will almost invariably attend such operations. I spoke of this before the State Society a few years since with some timidity, for the reason that there is such a prejudice in the minds of almost every one against amalgam—and especially as the

charge is often made that amalgam is only used by those who cannot put in a gold filling. It was not for the reason that gold could not be used, but because I saw gold fillings were constantly giving out, that I felt obliged to resort to something for the good of the patient, and the result has been so successful and uniform that I felt it a duty to give somebody else the benefit of it.—*The Dental Advertiser*.

RECENT RESEARCHES ON ANÆSTHETICS.

A VALUABLE paper, by M. Paul Bert, on the administration of anæsthetics, has recently been read before the Academy of Sciences ('Comptes Rendus,' vol. xciii, p. 768). M. Bert finds by experiment that if an anæsthetic be mixed with variable quantities of atmospheric air there comes a point at which an animal made to breathe such an atmosphere exhibits anæsthesia, and that this point bears a definite relation to the point at which the anæsthetic proves fatal. In experiments made upon dogs, mice, and sparrows, using chloroform, ether, amylene, and bromide and chloride of ethyl, it was found that the fatal dose was double that required to produce insensibility. In the case of protoxide of nitrogen the ratio is one to three. The result shows that chloroform acts not by the quantity inhaled, but by the amount of air mixed with it. This important result, although the experiments had not then been made upon mankind, shows that in all probability careful observation made by those who have the administration of chloroform in their hands may reduce its use to a minimum of risk, and that in the future it may be employed with scientific precision. An instrument by which the amount of admixture of air and chloroform could be easily regulated before inhalation seems therefore to be a desideratum.—*Pharmaceutical Journal*.

THE USE OF IODOFORM IN DENTAL PRACTICE.

SEVERAL papers on the above subject have been appearing in the 'Vierteljahrsschrift für Zahnheilkunde,' and more are promised. We hope in due course to give an abstract of the whole discussion, but at present cannot do more than notice the opening article by Dr. Julius Scheff, junr.

His attention, he tells us, was first called by Dr. H. Paschkis to the fact that iodoform can be successfully used as a dental pain obtunder, and in using it we do not meet with those unpleasant circumstances that usually follow the use of arsenic. The deleterious properties of arsenic are apparent in its effect upon the periosteum. In many cases a severe periostitis follows its use, and the tooth, which could have been saved by antiseptic treatment, must be extracted. The use of iodoform is not followed by such results. It can be applied several times without affecting the periosteum in the least. This is a great advantage over arsenical paste, which is made still more important by the fact that the pulp, in most cases, after having been covered with the iodoform paste, becomes not only insensible, but need not be disturbed, a fact which makes the capping of the pulp an easier matter than has hitherto been possible.

Dr. Scheff then proceeds to detail his experience with the new agent, "First," he says, "I combined iodoform with vaseline. I obtained a salve which could not be properly placed in a cavity with an instrument, and have, consequently, discarded its use in that form. A second attempt gave me a paste which, although better than the first, did not equal the arsenical paste as to its convenience in application. At last Dr. Paschkis succeeded in making a paste of the following composition :

"R Pulv. Iodoform., Kaolin, 4·00 āā, Acid. Carbol. Cryst., 0·50, Glycerine q. s.; ut fiat pasta spissior, adde Ol. Æth. Ment. Pip., gtt. x.

"This paste possesses the required consistency for introduction into a cavity, while the addition of the carbolic acid and peppermint oil, to a certain extent, destroys the disagreeable odour. It is placed on an exposed pulp, or on sensitive dentine, in the same manner as arsenical paste.

"Among the first series of experiments, I have fifteen cases of capping exposed pulps with iodoform paste; of these fifteen, eleven are perfect successes, a larger percentage than that obtained with arsenical paste. In no case was there any periosteal irritation discernible, much less any inflammation. In two cases, after careful excavation of the cavity, avoiding any mechanical injury of the pulp, the cavities were filled with Hill's stopping. These teeth are to-day (thirtieth day) in a good condition. In the second or latter class of experiments there are also two cases of successful capping, after iodoform paste treatment."

Dr. Scheff refrains from drawing positive conclusions from them, but he thinks they prove that iodoform paste is at present, at least, a much superior remedy to the arsenical paste for the protection of an exposed pulp which is painful, but has not yet undergone suppuration. In a few cases, namely, three of the first series, the pain was slightly diminished, and but one case proved unsuccessful; in this case periostitis was already present when the remedy was applied. It, therefore, is possible that the failure may be due to the primary periosteal inflammation, instead of the inefficacy of the remedy. In a second paper on the same subject, which we shall notice in due course, Dr. Scheff states that his earlier results have been confirmed, and he at the same time takes the opportunity of disclaiming any originality in his application of the drug.

THE Annual Meeting of the Odonto-Chirurgical Society will be held on the 13th inst., at 2 p.m., when a paper on "Dentition in the Horse and other Animals" will be read by Principal Williams, F.R.S.E., of Edinburgh New Veterinary College. The Council of the Society will propose that the present office-bearers should be re-elected, namely: President, J. Smith, F.R.C.S. Ed.; Vice-Presidents, A. Wilson, L.D.S. Ed., and Joseph Walker, M.D., L.D.S. Eng., London; Treasurer, Matthew Finlayson; Secretary, W. Bowman Macleod, L.D.S. Ed.; Curator and Librarian, G. W. Watson, L.D.S. Ed.; Council, Walter Campbell, L.D.S. Eng., Dundee, Leon J. Platt, L.D.S. Ed., Stirling, Malcolm MacGregor, L.D.S. Ed., and Austin Biggs, Glasgow.

Dental News.

APPOINTMENTS.

HUTCHINSON, S. J., L.D.S., M.R.C.S. Eng., has been appointed Dental Surgeon to the Dental Hospital of London, Leicester Square, vice A Coleman, L.D.S., F.R.C.S. Eng., resigned.

MARKHAM, R. C., L.D.S.I., has been appointed Honorary Dental Surgeon to the Newcastle-upon-Tyne Dispensary, vice Mr. Tait, L.D.S.I., resigned.

VACANCIES.

DENTAL HOSPITAL OF LONDON, Leicester Square.—Administrator of Anæsthetics. Applications by March 13th.

DENTAL HOSPITAL OF LONDON, Leicester Square.—Assistant Dental Surgeon. Applications by March 13th.

NATIONAL DENTAL HOSPITAL, 149, Great Portland Street, W.—House-Surgeon. Salary £50 per annum. Applications by February 24th.

Correspondence.

[We do not hold ourselves responsible for the opinions expressed by our Correspondents.]

THE EXPANSION PLATE.

To the Editor of the 'British Journal of Dental Science.'

SIR,—I observe with pain and regret that my old friend, Mr. Headridge, of Manchester, is led by his extraordinary misconception of the origin of "expansion plates" into some remarkable and utterly unfounded statements, which prefer a serious charge of dishonesty, unfairness, and inaccuracy against myself and son. I did *not* "become acquainted," through Mr. Headridge, "with the principles upon which 'sectional expanding plates' are constructed." I *never* tried "to imitate his plate" or "endeavoured vainly" or otherwise "to make his springs." Mr. Headridge did *not* send me wire which I, or any one, could possibly imagine to be pianoforte wire; and never suggested the use of other than

soft steel. I *never* described the construction, or claimed the invention of any particular form of expansion plate in any pamphlet or otherwise, or appropriated his ideas or those of any one else. On the other hand, I have for thirty years persistently advocated the practice of expansion, and have gladly availed myself of every means to that end that offered itself, though my attention was first strongly called to its importance in general regulating some twenty years ago by the accidentally split plate, as described by my son. It was, therefore, with great interest that I was acquainted by Mr. Headridge with his application of steel wire to expansion (as he says, in 1868) on my return from America, where the subject had been discussed. So highly did I value the idea as a step in the right direction, that Mr. Headridge saw fit to take out a patent of an absurdly comprehensive nature, as he now says "only to prevent" me "from claiming the originating of the said plate!"

Mr. Headridge's letter implies generally that ever since—for twelve years—I have appropriated from him without acknowledgment the "principle of expansion," and his particular "invention," though at the Congress my son not only gave him due credit in the paper read, but fully described Mr. Headridge's plate from his own drawings, pointing out the difference between it and the practical plates, of which such an unparalleled collection was exhibited.

The other statements made by Mr. Headridge (with, perhaps, *one* remarkable exception) are as strangely inaccurate as they are irrelevant, that one being his emphatic denial of having "ever received one single idea from me bearing upon his plate," which is possible, as, curiously, the form of spring I suggested to him and have since used (though he strenuously denied its utility at the time), he attempted to include in his 'Specification' (fig. 2), but unfortunately *misdescribes* and figures *upside down*! I am, &c.,

C. R. COFFIN, D.D.S.

94, Cornwall Gardens, South Kensington, S.W.,
London, February 23rd, 1882.

[WE cannot insert any more letters on this subject.—ED.]

CELLULOID.

To the Editor of the 'British Journal of Dental Science.'

SIR,—I have heard a good deal for and against the use of celluloid as a base for artificial teeth, but as I have always been able to use gold plate and vulcanite, separate or in combination, with every satisfaction to myself and patients, I have thought it prudent—up to the present time—to stick to old friends. Is it a fact that when celluloid plates break

in the centre they cannot well be repaired again owing to the material not forming a good union? If this is the case it would militate much against its use, for the piece would be useless to the patient after such an accident. How about its shrinkage and colour after a few months wear? A person going abroad with a celluloid plate, in case of breakage, would have great difficulty in getting it repaired, as few colonial Dentists use this material. Will you or some of your old subscribers please enlighten me on the subject?

I am, &c., CONSERVATIVE.

ANSWERS TO CORRESPONDENTS.

"*ANGLIA*" asks, "Will the Editor, or any reader of the '*British Journal of Dental Science*,' kindly inform me of what ingredients *Dr. Pierre's Eau Dentifrice* is composed?"

ALLEN HOLDEN.—Apply to the Dean of one of the Dental colleges.

J. F. CULLINGFORD.—Will appear in our next issue.

Communications have been received from Messrs. Berks T. Hutchinson (Cape Town), A. Maurice (London), "Excelsior," Hon. Sec. of Students' Society of Dental Hospital of London, Allen Holden (Rochdale), George Ward (London), V. C. Mallam (London), W. M. Stamper (Ulverston), W. Bowman Macleod (Edinburgh), J. F. Cullingford (Denmark Hill), S. J. Hutchinson (London), R. L. Markham (Newcastle).

BOOKS AND PAPERS RECEIVED.

- 'New England Journal of Dentistry.'
- 'Missouri Dental Journal.'
- 'Ohio State Journal of Dental Science.'
- 'Dental Cosmos.'
- 'El Progreso Dental.'
- 'Transactions of the Illinois State Dental Society.'
- 'Pharmaceutical Journal.'
- 'Chemist and Druggist.'
- 'Lancet.'
- 'British Medical Journal.'
- 'Medical Times and Gazette.'
- 'Transactions of Odonto-Chirurgical Society.'
- 'Giornale di Correspondenza pei Dentisti.'

NOTICE.—We desire that it may be clearly understood that our pages are open to all for free expression of their views on matters connected with our profession. We only ask for terseness of expression and MODERATION IN TONE.

When otherwise unobjectionable, difference of political or other opinion will never be regarded by the Editor as a disqualification for the admission of any communication to the pages of the *BRITISH JOURNAL OF DENTAL SCIENCE*.

British Journal of Dental Science.

No. 340. LONDON, MARCH 15, 1882. VOL. XXV.

THE TREATMENT OF PYORRHŒA ALVEOLARIS, OR INFECTIOUS ALVEOLITIS.*

By ADOLPH WITZEL, Essen, Germany.

(Concluded from page 216.)

It will be the surgeon's duty, whenever possible, to carry out this disinfecting process three times in the first week. But even this rational treatment will remain without result if he cannot persuade his patients to promote the cure by cleaning the teeth and gums by means of a soft brush, tooth-powder, and carbolised spirit. And even here the result will not depend upon the agents, whose composition I give below,† so much as on the way in which they are applied. We have all in times past used iodine, carbolic acid, chloride of zinc, nitrate of silver, &c., in the treatment of alveolar pyorrhœa, without any very great results. This fact is

* A paper read before the annual meeting of the Dental Association of Germany at Heidelberg, on August 1st, 1881, and published in the 'Vierteljahrsschrift für Zahnheilkunde.' We have to express our obligations to Herr Witzel for the woodcuts.

† R Acid. Carbolic. 5·0,
Spir. Vini Rectif. 400·0,
Aq. Menthæ Pip. 100·0,
Ol. Anisi 1·0, Ol. Cinnamon. Acut. 0·5.

M. For brushing the gum in alveolar pyorrhœa.

R Potassii Iodidi 5·0,
Acid. Carbolic., Zinci Chlorid., Aleoh. Absolut., āā 25·0,
Acid. Hydrochl. 2·0,
Aq. Destill. 10·0,
Ol. Menthæ Pip. 5·0.

Misce et filtra. For syringing out the pockets of gum in alveolar pyorrhœa.

easily explained, for hitherto, in our use of these applications, we have never been able to bring the medicament to act directly on the seat of the disease. When we have attempted to convey nitrate of silver in powder or any other substance into the alveoli by means of a piece of wood, it has usually happened that the agent has been rubbed off the wood by the margin of the gum, with the result that the action of the escharotic has been confined to the latter, while the contagium has been quietly left to continue its work in the alveolus. The result is quite different when we make use of this syringe—which I may add has in my hands also proved extremely valuable in the antiseptic treatment of the root-canals—for the application of the antiseptic to the alveolus for which we intend it. This method of treatment, although I recommend in it the employment of well-known agents, is so different from our old system that the two cannot be compared for a moment, and I think that my experience up to the present time entitles me to express the hope that by the use of the alveolar drop-syringe we shall quite certainly be able to contend against alveolar pyorrhœa with more success than hitherto.

In conclusion, I will show you first the model of a jaw, from which after fruitless treatment of the disease in question by means of the old method without the syringe, I had to extract the teeth that are missing, though quite sound. The patient, who was at the time a man of not more than forty years old, with strong teeth, now wears an artificial denture.

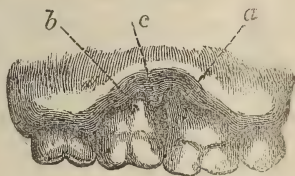
In the case from which the other two impressions were taken the jaw and teeth alike were strong and healthy. About a year ago commencing alveolitis appeared at the first upper molar on both sides, and at the second lower molar on the left side. These three teeth, which had already become very loose, were extracted, and the alveoli of the neighbouring teeth, which were less involved in the septic process, were repeatedly injected with the solution of iodine, phenol, and zinc chloride, alternately with simple tincture of iodine, which we know to be a very powerful antiseptic. The patient, who had previously somewhat neglected his Dental toilet, now thoroughly brushes his teeth and gums several

times a day with a soft brush and carbolised spirit. He comes to me every eight weeks to have the alveoli previously involved in the disease injected, and we are both rejoiced to see the continued healthiness of his other teeth.

In another case, a man aged twenty-four, the disease ran a very peculiar course. At the age of twenty-two the lower central incisor, which was somewhat prominent, and the left first lower molar were attacked by the disease, and shortly after extracted, the alveoli of the adjacent teeth remaining healthy. Two years later the affection showed itself in the alveoli of the upper jaw, and the patient himself removed the right first bicuspid, which had become very loose. Suppuration from the alveoli of the left bicuspid induced him to again seek professional aid.*

On examination it was found that the alveoli of the first bicuspid, and first molar on the left side were entirely disintegrated, as also that of the first right molar. Here the process had completely destroyed the septum (fig. 9 c)

FIG. 9.



between the first and second molar, and had partially destroyed the facial lamella of each tooth (*a*, *b*). Fig. 9 shows this portion of the alveolar process; it represents an appearance which may be looked upon as characteristic as regards the extension of alveolitis in the upper molars.

The prognosis in this case was an unfavorable one, for not only were the alveoli of the teeth figured above either

* The young man is now quite cured. He says that at the age of eighteen he contracted syphilis, but there is no other evidence to confirm the statement. In another man, aged thirty-six, alveolar pyorrhœa made its appearance in a similar manner in the first molars of the upper jaw four years after recovery from syphilis. The teeth were at once extracted and the evil removed, for the alveoli of the remaining teeth are now, after a lapse of two years, quite healthy.

partially or entirely destroyed, but there was a copious flow of pus on pressing the gum over the canines, though these teeth were still firm. The alveoli of the lower jaw were healthy, the only sign of disease consisting in an eversion of the papilla of gum between the first and second molars on the right side. In this case there were no concretions on the necks of the teeth, but the roots of the loosened teeth were thickly set with small nodules of deposit of the size of a millet seed.

In the treatment of this case the first step was to extract the teeth which occupied the necrosed alveoli of the upper jaw, in order to put a stop once for all to the injurious discharge of pus; the next thing was to protect the remaining teeth as far as possible and to make them once more capable of use. After extraction I found on the septa between the alveoli lobular granulations, which I removed as thoroughly as possible with a sharp gouge (Löffel); and I next proceeded to excise with the same instrument the necrosed remains of the alveoli on their facial aspect.

The canines were still firm, though their alveoli were diseased, and an attempt was made to treat them conservatively. The treatment consisted in syringing out the alveoli with solution of chloride of zinc and phenol, and in scraping the carious alveolar border with a sharp excavator (fig. 10).

FIG. 10.



This scraping away of the soft alveolar border seems to me worthy of recommendation in cases where we wish to try and save such teeth. The procedure, however, is only advisable in the case of teeth with single fangs, especially the canines, which, from the length of their roots, can afford to lose a considerable portion of their sockets.

There is one point which I must not omit. In the discussion which followed my paper at the Heidelberg meeting, among other suggestions it was proposed to cleanse the recess of gum by means of a stout camel-hair brush. I tried this procedure in this patient. I found, however, that

it was exceedingly difficult, nay, it was almost impossible, to introduce the brush between the gum and the neck of the tooth. At length I certainly did succeed in removing fairly completely the pus from the pocket of gum and in applying the antiseptic between the gum and the neck of the tooth. But this rather complicated procedure did not appear to me to furnish any satisfactory result. On the other hand, when the caustic was introduced deep into the pocket of gum by means of the syringe, the effect was most striking. While pus could be obtained on pressing over the left canine, as much after brushing it out as before, on the other side two injections sufficed to arrest the suppuration. Whoever, therefore, wishes to treat alveolar pyorrhœa in suitable cases, let him make use of a fine syringe and repeatedly cleanse and disinfect the pockets of gum with it. The patient cannot, I have become convinced, himself apply the injection.

The treatment of this patient is not yet completed. I believe, however, that I shall succeed in curing the alveoli of the canines. It is questionable whether the second molars, the internal buccal fangs of which are partially laid bare, can be preserved; the isolated bicuspid, the alveolar margins of which I have also superficially scraped, will again become firmer on the cicatrisation of the adjacent alveoli, so it will perhaps be possible to retain them. My more recent experience teaches me to regard this affection as curable in many cases—especially in younger subjects—if practitioners will only give up useless attempts to preserve in their infected and necrosed sockets teeth which are already loose.

The more assiduously the patient assists us by brushing his teeth two or three times a day with a soft brush and carbolised spirit the more favorable will be the results of our treatment. You must, therefore, impress upon the patient as soon as he comes into your hands that your efforts will be without avail, if he does not persevere in cleaning his teeth in the manner described, and come to you for the six weeks two or three times a week to have his alveoli disinfected.

Gentlemen, I now come to the conclusion of my paper, but I do not regard the subject as in any way completed or exhausted. Perhaps, however, we shall more easily succeed when our researches are all directed in the path I have indicated in determining the nature of a disease which ever confines its destructive influence to the soundest teeth. *The most important part of this treatment falls under the head of prophylaxis*, for, according to my view, which is also shared by Riggs and others, it is deficient care of the teeth and gums that is the chief cause of this local lesion, which once present endangers every one of the teeth. The Dental Surgeon must bear that in mind, and in the case of younger patients who present deposits of concretion under the gums, must make every effort to carefully remove them twice a year, and to persuade the patients to undertake that rational care of the teeth and gums which is so frequently neglected. People are in the habit of recommending and using the hardest brushes and strong tooth powders to scour the teeth, but they, at the same time, carefully avoid the merest touching of the gums. The use of hard tooth brushes, however, is a bad habit, against which we cannot inveigh too strongly, and it is the duty of every Dentist to warn his patients that a simple tooth powder of chalk and a little soap is the best to use, but that brushing the margin of the gum twice a day

FIG. 11.



with a soft brush (Fig. 11*) and spirit is absolutely necessary.

* This brush is much more to be recommended than the kinds hitherto in use, with which, owing to their perfectly unnecessary size, it is not possible to clean the lateral surfaces of the molars properly, especially those of the wisdom teeth. With the above small brush one can comfortably reach every free surface of the molars, even in the confined space of the smallest mouth. I have had brushes of this form made of two different degrees of hardness: one with quite soft bristles, which is used as a gum-brush and with spirits only; the other with somewhat stouter bristles, for cleaning the teeth with

For it is only by the use of spirit that the mucus which collects on the borders of the gums and between the necks of the teeth can be removed. It is not enough to pour twenty or thirty drops of the solution into a glass of water and rinse the mouth or brush the gums with it. The best way is to half fill a small glass with the solution, and to dip the brush into it several times at each cleaning.

Possibly you may look upon this last observation as superfluous. I am of the opinion, however, that the care of the gum is still very frequently left altogether out of consideration by many otherwise capable Dentists. They will mallet gold into the very smallest fissures in molars, the sockets of which are already showing traces of alveolar pyorrhœa, in order to prevent the extension of caries in teeth which would last just as long without such fillings, but they deny their patients the most important service, because they neglect to clean the teeth and treat the pockets of gum. And yet the Dentist can preserve more sets of teeth by carefully cleansing them and by rational advice as to the treatment of the gums, than by any other operation.

Attention to the gums must be more strongly insisted on ; without it we can expect no success whatever in our treatment of the disease under consideration. The advantage, however, which patients derive from carefully cleansing their teeth of concretions of tartar, is, as is generally believed, far greater ; and the more the Dentist directs his efforts in this sense the more good will he do.

In conclusion, gentlemen, it is not in the preservation of useless teeth and the filling of decaying stumps that the secret of conservative Dentistry is to be sought, but in the removal of all diseased teeth which are not absolutely necessary for good articulation, and in rational attention to the gums.

tooth powder. These brushes, the softer of which is also useful for cleaning children's teeth, have a bent handle and three rows of bristles, each row containing nine to ten bundles. With the aid of this description and the figure any manufacturer can make this kind of brush, which I hereby recommend to their notice.

SURGERY TALK ; OR, CONVERSATIONS BETWEEN PATIENT AND OPERATOR.*

By JOHN LAWS, L.D.S.I., of Weymouth.

THE art of conversation, the oral interchange of thoughts and ideas between two or more persons, is one which should be fully cultivated by every practitioner of Dental surgery. Few have such opportunities afforded them of indulging in it as he ; still fewer have the chances of imparting by its means instruction so needful, or that would be so much appreciated by its recipients. Daily compelled, frequently for hours at a stretch, to remain in the company of two or three persons, the operator will find that a pleasant, easy conversation on topics with which he is familiar, but to which his listeners are probably strangers, instead of hindering him will help him with his work, by enabling him to forget the aching back and the much-strained muscle. Again, few people are brought into contact with such a great variety of temperaments and differences of character, all requiring different management, yet all necessitating a very large amount of tact and skill on the part of the operator in order that he may not only perform the particular operation required by each, but at the same time impart to each, in a considerate yet conscientious manner, the praise or blame, advice or warning, which is quite as much due to his patient as is the performance of every operation to the fullest measure of his ability. And yet this is an art to which little attention or little thought is given. With by far the majority of our operators the time spent with the patient in the surgery is exclusively devoted to the performance of the particular operation, and either no conversation at all, or political small talk or petty gossip, is permitted to engross the attention, and time is utterly lost which might have been most profitably spent in carefully and judiciously imparting to our patients the alphabet of Dental Pathology ;

* Read before the Odonto-Chirurgical Society on February 9th, 1882.

and laying down for them, almost imperceptibly, yet in a manner which will strike home, rules, by the observation of which caries may in a large measure be either prevented or modified in the future, not only in their own individual cases, but in those of generations yet to come.

Much aptitude, perseverance, and a well studied observation of human nature, are required to commence and carry on such conversations as I have indicated. We all know that the address, or tone, or manner best suited to and most likely to tell with the patient who comes for half an hour's gratuitous service in the early morning, would be very *unsuited* to the lady who engages our attention later in the day, and is accompanied by her friend or maid; yet both stand equally in need of advice and instruction, which are as much due to them as any other service we may perform. And if we allow "Mary Jane" to depart from our presence without earnestly giving her the warning or advice (which she may stand so much in need of), because she is a servant, and we have more important matters to think about; or, on the other hand, if we allow the lady to leave our room without having conscientiously given her whatever instruction we can impart to her for the future well-being of her dental organs, because we may fear it is a delicate matter on which to address her, and might give offence—then in neither case have we more than half performed our duty, or honestly fulfilled the charge committed to our trust as Dental Surgeons.

I was much struck a short time ago by reading a paragraph in one of our Dental journals, which it will not be out of place to reproduce here, as it well illustrates my meaning. Our American friend, in relating it, says:

"A young man came to have his teeth cleansed and scaled. He seemed to have no idea of cleanliness, and had never used a toothbrush, toothpick, or even rinsed his mouth. I felt that if I performed the operation he required, of scaling and cleansing his teeth, I should simply be throwing away my time and his, and that eventually he would lose his teeth. I thought I could do him a better service by saying something he would never forget—that would shock him and arouse his pride. I said—'Young man, my friends all think

I am a kind man, and I mean to be. Now, I have many patients who are very particular, who want my fingers to smell clean and sweet, and so I have to wash and scrub them after I handle a patient's mouth. I do not keep a cow, because I might be called upon to milk her; and if I did, it would take too long to get rid of the bad odour. If I cleansed your teeth it would take too much of my time to get my hands in proper condition after it; and although I am said to be a good-hearted man, I do not pretend to be any better than God Almighty, who is said to help those who help themselves. Let me see that you have some idea of cleanliness about your mouth, and if there is anything you can't do, come to me and I will help you out.'

"I did not know how deeply I had struck. The young man got up, and in a very modest way begged my pardon, and bowed himself out. I did not see him again for twenty-five years, when one day a man stepped up to me and said, 'Would you like to look at a set of teeth?' I said I should, if he had a set he wished to have looked at. Opening his mouth, the man said, 'Look in here.' I looked, and saw the most beautiful set of teeth I had ever seen—teeth perfect in form, not a discoloured one in the whole set, and the gums perfectly healthy. I said to him, 'My dear sir, I am *very* much obliged to you. I did not suppose there was a person in the world that had such a set of teeth as that. They are a credit to your Dentist.' He said, 'I have not got any Dentist.' 'Then,' said I, 'they are all the more credit to you.' He replied, 'You may well say that. I take credit for that job, and I feel proud of it. Look here! you don't think it would make your fingers stink to put them in that mouth, do you?' I said, 'Oh, no! What do you mean?' He asked, 'Don't you know me?' I said, 'I don't know that I ever saw you before.' He replied, 'I never shall forget you. I went into your office twenty-five years ago to get my teeth cleansed, and that is the way you met me.' And he repeated what I had said, recalling the facts to my memory."

Now, I have no desire to lay too much importance to a story of this kind, or set it forth as a model for us to copy in

our ordinary daily conversations with our patients, for we must remember that the American, when speaking of number one and his achievements, is not unlike the Cockney from home when speaking of the marvellous wonders of the metropolis, or the Scotchman abroad when extolling the picturesque beauties of his native hills and dells—just a little apt to exaggerate. But the story, whether exaggerated or not, contains a moral, which moral it is my earnest wish should be the pith and essence of this paper, viz. that our work, however cleverly or scientifically performed, is only half done if we do not follow it up with earnest words to each of our patients in regard to that work, giving them the why and the wherefore of the necessity for the special operation performed, and explaining most fully what is their duty in regard to caring for and endeavouring to protect the work in the future; for I think you will agree with me in saying that the result as to permanence of a large proportion of our operations depends nearly as much upon the patient as the operator. No matter how good a filling may be, or how cleverly and perfectly it has been inserted, the chances are that the time, and thought, and care, and labour, and money that have been expended upon it will be utterly thrown away unless we have taken the pains to teach our patient to take care of it.

I will now select a few of the patients and cases one is most likely to meet with in any ordinary day's work. Say we commence our duties at 9.30 a.m., and reserve till 10 o'clock for gratuitous cases. We find awaiting us a boy, age about 15, with a raging toothache, imploring us to take his tooth out. On examining his mouth we find that extraction will be the kindest and most efficient service we can perform for him. It is done, and he is made happy; but before we let him go, we strongly urge him to return very shortly, to have the fellow-tooth on the other side of his mouth likewise extracted, as it is in a very bad condition; and noticing that his mouth has all the appearance of being totally innocent of tooth-brushes or tooth-powders, we plainly tell him that poverty is no excuse for uncleanness, that we shall be very happy to perform any operation for him that

his teeth may require in the future, but only on condition that he presents to us a clean mouth ; finishing up by letting him know in pretty plain language that he is damaging not only his teeth but his constitution and future health by indulging in the use of tobacco at so early an age. He leaves our room and goes his way, perhaps to follow up our advice and possibly return, perhaps not ; but, whichever way it is, we have the consolation of knowing that we did not let an opportunity slip, but strove to use to the best advantage the chance which Providence had thrown in our way of speaking earnestly, and thereby influencing for good a thoughtless lad.

But another patient awaits us—this time a Miss of probably twenty summers or thereabouts—who, though adorned with feathers and trimmings and gloves, such as many a well-to-do tradesman's wife might envy, is yet not ashamed to give us an early call for gratuitous advice, and perchance services : a shop girl, of course, whose brains may be said to be as small as the extent and extravagance of her wardrobe is absurd and unnecessary for her station. On examining her mouth, a sad state of affairs is revealed ; decay, deep-seated and extensive, has taken hold of a large proportion of her teeth, some already past salvation, others not so. We at once commence a conversation by asking why she has neglected them so long. She replies that she had not noticed they were so bad, till a sharp twinge the previous day had made her examine her mouth ; then, fearing the tortures of toothache, she came to ask our advice, hoping the cost of putting them in order would not be great, as she could not afford to spend much on her teeth, and indeed, rather than that, would let them all go, and then have new ones. How she could reconcile the sealskin jacket, the feathers, and the gloves with her inability to spend a little on her teeth for her health's sake, we, who are not initiated into such mysteries, know not ; but our duty was clear, and our conversation must plainly show her the folly under which she is labouring. Hence we commence by telling her that to put her mouth in order would necessitate something like a week's work, which, of course, she could not expect to

have done for nothing, that it would be wiser to spend something in saving her natural teeth than in waiting until she required artificial substitutes, which are all very well in their way, but much more expensive and not quite so reliable, and that she must reconcile herself to the fact that the teeth which Providence bestowed upon her are of some value, and worthy a little attention and expense. She also goes her way, perchance a little humbled, but still with a little honest truth to ponder over, which may possibly lead to wise resolutions and good results.

We now turn our attention to our appointments for the day. Amongst them we have a young lady accompanied by her mother. We have arranged to insert for her this morning a gold filling, and anticipate about two hours' work. Here is at once presented a fine opportunity of profitably whiling away the weary waiting of the parent, diverting the attention of the patient, and imparting to both facts and information, which will interest and prove of service to them. Hence, after examining the tooth to be filled, asking a few questions and making a few remarks upon it, we select our rubber-dam, &c., and whilst so doing explain the object in using it and the necessity for it. Having thus at the beginning taken both parent and patient into our confidence, our way to continued and easy conversation is not difficult; at each stage of our operation we offer observations concerning what we are doing, not forgetting to mention a little about the anatomy of a tooth, from what source it derives its life, of how many parts it is composed, of what each part is composed, what changes takes place if its pulp is destroyed, and what results it might lead to, why we fill this tooth with gold and another with amalgam, what are the probable causes which have led to this tooth's decaying, &c., until we find that the two hours have slipped away pleasantly and profitably, our filling is completed, and we finish up by eventually impressing upon the patient what means she must adopt and what rules must be rigidly adhered to, even now the tooth is filled, if she desires to keep it and save it from further decay.

In the course of the day a retired colonel comes in by

appointment to have his teeth scaled. He is a tall, heavy, broad-chested, mighty man of valour, with a set of teeth almost equal to grinding cast-iron. According to our habit, we at once commence a conversation, and compliment him on the possession of such a rare prize. He values his teeth, has always valued them, and hopes to carry them intact to his grave, by taking all possible care of them. Shortly he puts the question—"How is it that people's teeth nowadays are so bad that it is quite the exception to find a person in the possession of all their teeth?" Now is our opportunity; 'tis the very query we wanted—what, indeed, we had been working for. This gallant officer is a father, with many sons and daughters growing up, all with teeth much inferior to his own, and which have been under our care for some time. Now is our chance, for we can speak upon matters which are far too delicate in nature for us to broach in our intercourse with ladies, but which we know through him will find their way home to such; so we set to work in right good earnest, not only to scale his teeth, but to have a thoroughly good conversational talk with him. We begin by telling him of the importance of the subject he has unconsciously entered upon, and how it is almost inexhaustible. We then tell him a little about the genesis of the human teeth, remarking how their formation commences about the tenth week of foetal life, and how, at birth, many of the teeth are already formed and calcified; then we draw his attention to the manner of life and living at present pursued by our mothers and expectant mothers—how, in place of taking a genuine pride in the fact that they are about to become the mothers of untold generations, and thereby have the fate and happiness or well-being (as far as health is concerned) of those generations in their keeping, it has come to be considered the proper thing to distort the figure and hide pregnancy as far as possible; to make no alteration during two thirds of the pregnant period in the mode of life, so far as indulgence in pleasures and social frivolities is concerned; in fact, to consider it a burden, and almost a shame, to be called upon to occupy what God has ordained as the highest position a woman can fill upon

earth. And, further, when at length the poor infant is born, and is eager and ready to receive and be nourished upon what only a mother can properly supply it with, we find that, instead of every mother feeding naturally her own offspring, perhaps only one in three has the courage to do so. A century ago a woman who neglected wilfully such a duty would have been scorned by her sex, now the woman who undertakes it is looked upon as a self-made martyr. To the winds with your cow's milk, or your asses' milk, or your goat's milk. Analyse it as you will there is no food fit for an infant but its mother's milk; nor can either its body, brain, or teeth be so fully and perfectly nourished on any substitute, and it will be a glorious day for Great Britain when it shall be made a *sine quâ non* that before entering upon marriage the woman shall undertake to suckle her offspring.

Following upon this, we enter into a conversation upon our food, especially speaking in strong terms of the value of the phosphates, and showing how carefully and wonderfully at the present day every means are taken to eliminate almost all trace of them from our daily diet. We continue by laying stress upon the necessity of using prophylactic measures, and paying due attention to the general hygiene of the mouth, &c. We find we have only got warmed to our subject when another patient is announced. The hour we had reserved for the colonel is gone, and we are obliged to dismiss him, making an appointment for a future day to finish our work and resume our conversation. He comes accordingly, and, whilst carefully and efficiently paying all due attention to the execution of the primary object of his visit, we resume our conversation, taking up points we had not time to touch upon before, and in full, giving him such a lesson in Dental pathology that he tells us with gratitude he is not likely to forget it—that he now sees clearly a cause for our present bad teeth, or Dental degeneracy, which must of necessity eventually lead to our national degeneracy, and that he shall use his influence, in his own family and outside, to stem the awful tide which is working such dire destruction.

I have chosen these few examples, not so much as models to be copied, as types of how easily our conversations may be commenced, our thoughts set to work with, or independently of, our fingers, our patients interested and instructed, and the cause of humanity benefited. If we fully realise the responsibility laid upon us as Dental Surgeons we shall not be slow to recognise the benefits that must result from judicious conversations with our numerous patients. If every Dental Surgeon in our land would resolve, even if only one day a week, to sow in the mind of every patient that visited him on that day one seed out of his granary of knowledge concerning the *causes* of the present prevalence of Dental disease, eventually a plant would grow up of which we might be proud, and the terrible wave of destruction, now so rife, if not stemmed, might at least be checked. We pay too much attention to remedial measures and too little to preventive ones; our very best means of drawing attention to the latter is by our "Surgery Talk;" it is a most powerful lever which has been placed in our hands; it will influence the father and the mother, it will influence the young man and the maiden, it will influence the children yet unborn. To over-estimate its importance is impossible. In olden times it was considered almost a disgrace for a woman to be barren or fruitless; now the childless woman is almost envied, and the inconveniences and expenses attendant upon child-bearing are looked upon by many as burdens. Let us endeavour, then, by our conversations, to show up this matter in its true light, and strive to bring about a better and more natural—hence more healthful—state of things; for, as the power of speech, that Divine gift, which an all-wise Creator has bestowed solely upon mankind, raises him immeasurably above any other living animal, the responsibility devolves upon us of taking every opportunity of using it for the advantage and well-being of our fellowmen; and, as Dental Surgeons, opportunities are thrown in our way which few possess, of educating our race to the necessity of paying strict attention to the natural laws of health, enforcing specially upon their minds that portion of the subject which belongs more particularly to us, and, to my mind, is as

important as any other ; for I have little hesitation in saying that the deterioration of our teeth at the present rate means eventually the degeneracy of our race. Let every Dentist, then, not consider himself proficient in his calling, or equal to the efficient performance of his duty to his patients, until he shall have studied and mastered this art of conversation, so that the drift of our "Surgery Talk" shall be to elevate the minds of our fellow creatures, and not only enable them to appreciate our work and strive to take proper care of it, but to endeavour in their families, by due attention to the simple laws of hygiene, to bring about a state of things through which their offspring shall at least not be worse off in their dental organisation than they are.

By thus cultivating and earnestly using to the utmost of our ability the conversational powers with which God has blessed us, we shall indeed benefit our race ; for if Britain is to retain her supremacy among the nations, her sires must retain their teeth.

ALVEOLAR PERIOSTITIS OF THE JAWS IN DIABETES.

A MEMOIR upon this subject, read at the Académie de Médecine by M. Magitôt, is terminated by these conclusions:—1. The examination of the mouth furnishes a constant sign in the diagnosis of diabetes ; 2. This sign consists in an osteo-periostitis of the edge of the alveoli ; 3. It appears at the commencement of the disease, and persists during its entire duration, acquiring in certain cases the importance of a revealing sign ; 4. This alveolar lesion is characterised as an initial sign of diabetes by a period of deviation of the teeth, and corresponds to the phase of the actual existence of the disease by these becoming loosened, and by alveolar catarrh, while a falling-out of the teeth occurs at the most advanced period of the diabetes. If the diabetes still continues after this last occurrence, the alveoli, deprived of their teeth, may become the seat of a bony absorption, consecutive or not to partial gangrene of the gums. This last sign is critical, preceding only by a short time the fatal termination of the disease.—*Gazette de Hôpitaux*.

THE HÆMORRHAGIC DIATHESIS.

By THOMAS F. CULLINGFORD.

IN order to ventilate this subject, and so probably obtain the opinions of other of our brethren (to the entire body of whom it must be a subject of great interest), I am induced to offer a few remarks, coupled with a description of two out of four cases that have come within my our observation. Before doing so, however, I may mention that I shall endeavour to avoid technicalities and be as plain and explicit as possible. This hæmorrhagic diathesis or tendency to bleed, I am inclined to believe, differs almost with each subject both in quality and degree, even when the cause is the same. I do not, however, propose here to discuss the causes of this but merely to open up the topic of *treatment*.

A case has but recently come under my hands where neither scurvy, purpura, nor hæmorrhagic diathesis was in *any* sense *marked*, and the patient was a strong man of thirty-six. He came complaining of acute toothache in the first lower molar, left, which was in an advanced state of decay, and begged its removal. Having extracted it with about the ordinary difficulty—I say ordinary difficulty, because when a molar tooth is wedged between others and all are firm in their sockets there must always be somewhat of difficulty in getting it safely away, but there was nothing unusual in this case—and after rinsing the mouth with warm water the patient went away comfortable. In about an hour's time, however, he returned with a tolerably free bleeding from the part operated on. After plugging with burnt alum and lint and applying pressure this soon ceased, I was thankful to see, and I felt a profound relief when I remembered my other case and the intense anxiety and trouble it caused.

This was a lady of about thirty years of age, of delicate constitution, but organically healthy, who applied to me to have a loose stump removed which was a constant source of annoyance to her. Finding the gums turgid, swollen, and

irritable all round this and two other stumps, all of which were very loose and on the surface only, I advised the removal of all three, which she readily agreed to. I need hardly say that in this case there was *no difficulty* at all, for being superficial they were removed almost without pain; the bleeding in this case was rather free for a minute or so, in consequence of the surcharged blood-vessels, but being of a superficial character soon ceased, even though encouraged by frequent rinsings of warm water. The gums looked relieved considerably from this, and the patient went away comfortable and happy.

After about six hours, however, a sister called to inform me of the fact that about two hours after her sister got home her gums started bleeding and had continued so, and to beg that I would go and see her and stop it, as her friends were getting anxious. I promised to do so as soon as possible, thinking naturally that from the character of the wounds the bleeding she spoke of was merely a slight oozing, and would most likely be easily stopped by any styptic application or even by pressure only. Judge my surprise on examining the mouth to find an arterial bleeding, very copious and of a most forcible character, as the following account will show:— Having immediately set to work by first of all thoroughly cleansing the mouth from the partly coagulated blood with cold water, getting the patient to sit upright—she was lying on a sofa—I at once made a large pellet of lint and saturated it with *Liquor Ferri Perchlor. Fort.*, and applied strong pressure with my fingers, the better to cover the three distinct bleeding orifices, and so held it for about ten minutes, when on looking to it I found the mouth full of bright red blood, and without removing the pressure in the least discovered an oozing from round all the necks of the neighbouring teeth. Having satisfied myself of this, I at once began to see the troublous nature of the case. I now again got the patient to well wash her mouth with cold water and to hold it in her mouth often, while I directed some ice to be sent for, and wrote for some dilute sulphuric acid to be fetched from a chemist's. I gave a twenty minim dose of this at once, kept ice well applied to jaw, and now again

began to apply another dressing, this time using Pulv. Matico on my pellet, *well loading it*, fastening it tightly down with half a wine cork, and tying up the jaw tightly, keeping the ice constantly applied to the outside of the jaw. In a short time, however, the patient found her mouth filling, and in leaning forward a quantity of blood escaped. I still, however, requested quietude and longer time in order to get a fair trial of the dressing; but the mouth filling again, I began to doubt its efficacy. I still, however, enjoined patience and quiet, but in about ten minutes the mouth again filled, so I removed the dressing, and the throbbing or jetting peculiar to arterial bleeding was distinctly to be seen.

I now thought it best her usual medical attendant should see her, and in order not to arouse any fear or alarm and so accelerate the heart's action, I suggested I should like to ask him a few questions relative to her for my guidance. He was at once sent for, and on his arrival I discovered she had had once before an unusual bleeding after a slight accidental wound, so we continued our treatment. Another dose of Acid. Sulph. dil. was given, and a dressing of lint with burnt alum applied with as strong a pressure as we could get was made, the patient now beginning to look very pale and faint. We waited anxiously and patiently some ten minutes for the result, but another escape from the mouth told its own tale.

I now took the doctor aside and discussed the desirability of getting a third opinion, with the result that a medical friend of very large practice was sent for, who at once came, and after studying the case and treatment fell back upon the Liq. Ferri Perchlor. again, taking it in hand himself. After the dressing was bandaged on, the patient was put to bed, being now extremely weak and faint, with a deathly pallor of countenance, and the whole thing looking very serious; extreme anxiety was depicted on all faces, but we all stood anxiously waiting and watching the result. The patient was now rapidly getting weaker, and we all began to fear the worst; the pulse was barely discernible, and the breathing very short and light, but the bright red life blood was still escaping and gently sponged away, mocking all our efforts

and fast killing the patient. We stood silent and motionless while the poor patient was fading away, anxiously looking at each other till the end came and the patient had succumbed. She was now lying to all intents and purposes *dead*, although really it was fortunately but a dead faint, for presently her eyes opened. But what a relief came to one and all. *The bleeding had stopped*—nature had cured it, and nature only, for the extreme faintness was the consequence of the weakness of the heart's action, which had gradually increased until at length the muscle had hardly power left in it to throw its treasure forwards; the artery thus got time and opportunity to close in its own way, either by contraction alone or assisted by coagulation of blood.

Now what I wish to note especially in these cases is the difference between the two patients, the entire absence of any indications of hæmorrhagic diathesis, the slight provocation in the dangerous case, and the uselessness of all the means tried.

One case of this kind, with its horrible anxiety, is quite enough, believe me, to happen in one's lifetime, and what recompense is there to the Dentist for all this nervous tension and trouble? No fee in its ordinary sense repays him for one half the time and trouble a case of this kind produces.

Should the history of these cases arrest the thoughtful attention of others of our brethren, so that their experience and possible suggestions may be published, I shall feel that some good may have been accomplished, and possibly much trouble and anxiety prevented, where cases of a similar nature may present themselves.

77, Denmark Hill, S.E.

At the Examination held at the Albert Hall, St. Stephen's Green, Dublin, March 6th, 1882, Mr. William Henry Kirton, of Hyde Park Road, Southsea, Honorary Dentist to the Royal, Portsmouth, Portsea, and Gosport Hospital, and to the Home in Brunswick Road, Southsea, was admitted a Licentiate in Dental Surgery of the Royal College of Surgeons in Ireland.

British Journal of Dental Science.

LONDON, MARCH 15, 1882.

A HIGHER DENTAL DIPLOMA.

It has been suggested of late by more than one speaker and writer that a Dental degree or diploma ought to be instituted which should testify to the possession of a more advanced degree of Dental knowledge than the ordinary license. At present the proposal can hardly be said to come within the range of practical Dental politics, and doubtless very little would have been heard of it but for the continued freehandedness of the Dublin College in the bestowal of its Dental license. It is a proposal, however, of which we shall probably hear more and more as the status of the profession improves, and as the younger and more ambitious students who are attracted to our ranks begin to realise the exact value of the ordinary diploma. It is therefore perhaps worth while considering under what conditions the creation of such a superior degree would be advisable. It may be objected at the outset that we already possess all sorts of higher diplomas in the various qualifications in the gift of the medical corporations, and no one holds more strongly than we do the advisability of Dental students acquiring that higher amount of scientific and surgical culture which the better class of medical diplomas represent. But if we have not misread or misunderstood their expressions, the ambition of our younger members aims at something higher than that. They wish for some sign which will mark them out as having given a deeper study to, and acquired a higher competence in, the special walk they have chosen, and the contention is that no diploma in general surgery and medicine can effect this.

Few will fail to sympathise with these aspirations, though every one must find that his estimate of scholastic distinctions grows less with each year that separates him from his student days. We Europeans have not the childlike minds of the Chinese, who delight in fireworks and competitive examinations until their sparse locks grow grey. In short, the true value of all sorts of degrees is in the attraction they possess for the undergraduate mind, and the consequent stimulus they exercise on education, rather than in the advantage they give to their possessor in after life. It follows as a corollary from this proposition that the only valid argument for the institution of a higher Dental diploma will be found in the declaration of those who preside over Dental education in this country that the present inducements are insufficient to promote the higher study of Dental science. If the highest ideal of Dental study is secured under the present arrangements, *cadit quæstio*, and the vaulting ambition in our midst must seek a loftier pedestal to leap on where there is less danger of falling on the other side.

Assuming for the moment, however, that there is room in our speciality for two diplomas, without fear of their jostling each other, it becomes necessary to consider under what conditions the higher diploma should be given. No one, we think, will deny that the first condition to be required of candidates for such diploma should be the possession of that general knowledge of the art and science of healing which is implied by an ordinary medical diploma. It is a widely, if not universally, accepted axiom that special practice ought to be founded on general knowledge, and it was only the peculiar difficulties of the case which led to the apparent disregard of this axiom in the foundation of the Dental license. These difficulties would not exist in the event of a higher diploma being instituted, and every one would be interested in securing, on the part of the candidates, as thorough and as wide a medical culture as possible. This being granted, it follows that the bestowal of the diploma must necessarily be left in the hands of the present corporations, or in those of the body into which, it is to be hoped,

they will some day be absorbed. Before that day arrives, however, we shall probably see, if we can safely argue from the course of events in other branches of study, as in the case of the recent changes in the mathematical tripos at Cambridge, all the higher medical and surgical diplomas given for knowledge of a specialty. Both medical and surgical science are becoming too large for a perfect mastery of the whole of either to be expected of any man, and the time may be not far distant when we shall see both the Fellowship of the College of Surgeons and the M.D. of the London University given for knowledge in a special branch, like the D.Sc. of the latter university, or for research over a confined area like the doctor's degree of Edinburgh or Cambridge. When this happens we shall have *ipso facto* a higher Dental diploma which will correspond to the loftiest ambition. We may add, in conclusion, that this arrangement already obtains in Paris, where for the last few years an increasing number of theses for the M.D. degree have dealt with Dental subjects, and have been sent in by men whose intention it is to practise as Dentists. In the lower Dental education the French are admittedly behind us, but, to judge from the above fact, they have higher notions of the potentialities of Dental study than we have as yet attained to on this side of the water.

WE have heard of more than one complaint that samples of what had been considered perfectly pure chloroform are not found to stand the permanganate of potash test of M. Yvon, described in our last issue. English chloroform has hitherto been generally considered remarkably pure, and it has caused no small consternation to find that so very little of it will bear the new test. The explanation, however, is as simple as it is comforting. English manufacturers have found that the addition of a small quantity, not more than $\frac{1}{2}$ per cent., of absolute alcohol renders chloroform more stable; but this harmless, and for anæsthetic purposes even advantageous, impurity reduces the permanganate like any of the more deleterious impurities, such as amylic alcohol and the

chlorinated compounds, and hence the reason why so little English chloroform behaves properly under the new French test.

It is maintained, however, by others that, even when free from alcohol, chloroform will seldom fail to reduce the permanganate, and that the only way to secure a sample that will stand the test is to purify it by permanganate, in other words, to let it reduce so much that it will reduce no more. Then we shall have a chloroform on whose purity we can absolutely rely, as every subsequent change that may take place in it can easily be detected by mixing it with the test liquid. It has been asserted, though it is as yet very far from proved, that death from chloroform is in many cases due more to the impurities in the anæsthetic than to its own lethal effect, and if M. Yvon's views are found to bear criticism, it will become the duty of the manufacturers to purify their chloroform by means of the permanganate, and the duty of the administrator to test it with the same agent every time he uses it.

It would appear that the authorities at Cape Town have a very just idea of their duties as protectors of the public health, and that in some respects they are in advance of our own municipalities. The cowkeeper, the butcher and the baker, must all obtain due authority to practise their several callings; and, besides the usual restrictions as to medical practice, the Government grants licenses to persons legally entitled to practise Dental Surgery in the colony. It seems, however, that this system of granting licenses is in the latter case insufficient to warn the public against the incompetent charlatans who give themselves out as Dentists, and a deputation has recently presented the Governor of the Colony with petitions asking for further protection. The petitions were numerously signed, and amongst the signatories were many members of the Colonial Parliament, besides the leading members of the medical, legal, Dental, clerical, and pharmaceutical professions in Cape Town, Kimberley, Paarl, and other centres of population in the colony.

The 'Cape Argus,' in an article on the subject, very justly observes:—"Since the introduction of nitrous oxide gas as an anæsthetic for operations in Dental Surgery, and the use of powerful and poisonous drugs for treatment in cases of Dental pathology, besides the many serious and often fatal injuries inflicted on unfortunate people by unqualified Dentists (in many cases mere adventurers and charlatans), it has long since been found necessary in the United Kingdom, Canada, the United States, &c., to prohibit such persons using the title of Dentist, Surgeon-Dentist, &c., or implying that they are specially qualified to perform Dental operations, without first obtaining the Government licence. This enables the general public to discriminate between persons who simply undertake to perform Dental operations and the *bonâ fide* Dentist; and any one who places himself for treatment under the care of persons who have no title deserves no sympathy if he falls into the hands of adventurers, and suffers injury as well as imposition." O that we could believe that no one ever suffered injury or imposition from qualified adventurers on the British Register!

A WRITER in the 'Spectator' recently contended that the peculiar form of humour which the Americans have created is an outcome of their combining an acute perception of the incongruous with a very practical sense of the useful. The following humorous comments of the 'Philadelphia Times' on the statement that "the teeth of the soldier are now to occupy the endeavours of a corps of Dentists," are certainly incongruous enough, but we have failed to perceive their utility:—"It may be argued," writes the journal in question, "that since the old cartridge has been abolished, and the infantry have no more biting to do, the Government has no concern with the teeth of the soldiers or sailors. This, however, is a selfish and superficial view. It is well known that a toothless soldier is not apt for half the duty that a well-stocked jaw can render the country. A soldier with

defective teeth, too, costs the Government in doctors' bills, because it has been demonstrated that it requires the full force of an undiseased jaw to masticate the 'hard tack' thoughtfully provided for the military staff of life. Aching, rotten, or hollow teeth break down before the granite strength of this nutriment, and the physical system, responding to the lack of food, disables the soldier to take his place in the ranks. Again, the equipment of each regiment with a Dentist will save gunpowder, for it is well known that to alleviate his misery the soldier is prone to fire off his tooth by means of a charge of powder. This picturesque, but perilous form of Dentistry sometimes blows out the offending tooth, and not unfrequently the unoffending jawbone. Now, there are a few that will seriously contend that a jawless soldier is either a useful or decorative object in garrison or field. Indeed, from whatever point of view this great question may be taken up the need of a Dentist in the army is but too plain."

IN another column will be found reports of the Annual Meetings of Subscribers of the two Metropolitan Dental Hospitals, both of which have taken place since the date of our last issue. In either case, of course, an appeal for funds is made, but under rather different circumstances; for while the Dental Hospital of London is apparently laying by money for future extension, the institution in Great Portland Street has had to make necessary alterations on borrowed capital. The difficulty in making both ends meet has, in fact, induced the Committee of the National Dental Hospital to once again discuss the advisability of amalgamating the two hospitals, and to pass a resolution to that effect. We cannot sympathise with the proposal. There is room enough in London for more than two Dental hospitals, and besides, there is already too great a tendency in the profession to ball together in Leicester Square. From the teachers', the students', and the patients' points of view, two hospitals are

better than one, and it is the business of the Governors to find means of supporting them.

THIS present habit which the London hospitals have of living from hand to mouth is altogether unsatisfactory, and must come to an end ere long. Subscriptions will fall off more and more as wealth becomes more equally distributed, and sooner or later the inevitable resort to the provident system must come. The poor are as ready to subscribe for themselves as the rich are to give up subscribing for them. The only difficulty is with the Committees, the retired officers of which do not relish sitting at the same table with the representatives of the poor, who on any satisfactory system will naturally claim a voice in the management of institutions they mainly support.

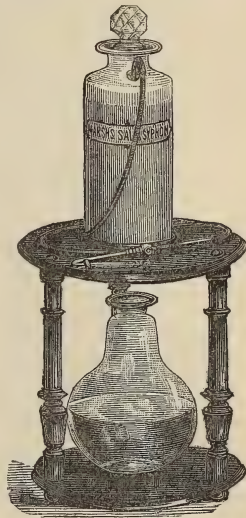
THE extracts from Vernon Galbray which were recently published in our pages will have sufficed to call attention again to this spirited book and the object for which it was written. There may not now be such flagrant advertising by Dentists as there was when Vernon Galbray was first published ; the Dental advertisements in the daily papers for instance have been reduced to a minimum since then. But there is quite enough to make it desirable that the public should be put on their guard against the traps that are laid for them, and Vernon Galbray is *the* book, and the only book, to open their eyes. It is sufficient to make one's blood boil to hear, as we constantly do, of the barefaced swindling and deliberate malpractice that is still perpetrated under the cloak of a learned profession ; and if the British Dental Association would only back up some of the poor servant girls and shop-women who have been thus imposed on and cheated, in prosecuting their betrayers, they would be playing a much more useful part than in making a ring for a struggle between two registered litigants.

The Dental Examiner.

[*Note.*—Dental materials and appliances intended for notice in the "Dental Examiner" should be sent to the Editor at 11, New Burlington Street, W. All preparations not generally known should be accompanied by a lucid description and a clear statement of their composition. The formulæ supplied *will not be published* unless a written permission is given by the maker.]

MARSH'S SALIVA SYPHON.

MR. WILLIAM MARSH, of Colchester, has introduced a saliva ejector so simple in construction, and so effective in operation, that those who desire to keep the mouth perfectly dry during some of the more prolonged fillings cannot use anything better for the purpose. Its construction is seen at a glance, and it can be so arranged for hospital work that three mouth-pieces can be used simultaneously. It is made in two forms, the first and most expensive being with cut-glass bottles and receivers, and the second in japanned tin. They are both of them provided with india-rubber tubes and nickle-plated mouth-pieces. We have experimented with one having a single mouth-piece, and we find that its suction is very great, and can be regulated by the stop-cock very readily. Before commencing, the lower vessel should be emptied and the upper one filled with water, care being taken that the stop-cock at the mouth-piece is turned off, and the opening that admits the water to the upper vessel properly closed. The stop-cock below the top glass vessel or canister should then be turned on, and if only a small quantity of water runs off and then stops the syphon is in working order, but



if the water continues to run there is a leakage either at the screw cap or in the tubing, which should at once be corrected. If, however, when in otherwise good order, sufficient suction is not obtained, a piece of india-rubber tubing, from four to six inches in length, should be attached to the stop-cock below the upper cylinder, when the extra weight of water thus obtained will increase the power. As the upper cylinder is much smaller than the lower one there is no fear of it overflowing, but when the upper vessel is filled the lower one should always be emptied. The rate of working can always be regulated by the stop-cock of the mouth-piece, and it should not be started until there is saliva to remove, and so regulated that the secretion is gradually exhausted. One very important direction must be attended to, to see that the india-rubber tube connected with the mouth-piece does not dip below the upper vessel, or all suction will cease; as the instrument is very portable it may be placed at the side of the chair so as to be out of the way of the operator.

THE ECLIPSE PLATINUM AMALGAM,

originally introduced by Mr. Jamieson, of Glasgow, has been greatly improved since we last commented upon it. It is much cleaner in mixing, and sets rather quicker. There is no amalgam in the market more easily manipulated, and we have so many fillings under trial that we hope to be able to speak more decidedly as to its qualities when it has been in the mouth at least twelve months. We shall also be prepared very shortly to say something more about Mr. Fletcher's fillings, all of which, and particularly those made with the gutta-percha hydraulic cement, are standing their tests admirably.

DENTAL RUBBERS.

OUR examination of Messrs. Ash & Sons' Rubbers was concluded in our last issue; the rubbers of other manufacturers we hope to deal with in due course, as opportunity presents itself.

Review.

On the Dental Follicle in Mammals. By CH. LEGROS and
E. MAGITÔT.

[FIRST ARTICLE.]

THE Dental world always receives with attention and interest any contribution to its science from Dr. Magitôt, and that prolific and indefatigable author is never at a loss for something to contribute. The present volume, however, has a double interest, namely, that the distinguished physiologist whose name appears first on the title page did not live to see the completion of his work; the death of Dr. Legros, in 1875, leaving Dr. Magitôt the labour of completing the researches single handed.

The three memoirs which together make up the work, appeared originally in the 'Journal de l'Anatomie et de Physiologie;' they followed each other, however, at great lapses of time and represent researches lasting over a period of nearly ten years. The first memoir discussing the origin and formation of the follicle appeared in 1874. The second discussing its morphology in 1879. The third, which deals with the formation of the tooth itself from the follicle, in 1881.

This intermittent publication of parts of a series of investigation is open to the objection that by the time that the later ones appear the earlier ones stand in need of extensive revision. Not only this, but in the perusal of such a *brochure* the commencement is naturally comparatively uninteresting and tedious, owing to the fact that if it is worth anything it has been published, discussed, incorporated into text-books, and familiarised to every student for years. It seems almost ridiculous to read in a book, dated 1881, a grave discussion, the object of which is to disprove Goodsir's theory, or to meet with such a reason for widespread error concerning the mode of development of the follicle as that *so very few sections had been cut*, and that the specimens had been for the most part flattened out between two glass slides! All this was true then, no doubt, but there is scarcely a student now who

has not cut numerous sections of germs, and we have almost forgotten what Goodsir's theory was.

The conclusions arrived at in the first memoir are the following :

1st. That the first suggestion of a Dental follicle appears in the form of an inflection from the epithelial layer of the mucous membrane of the gum.

2nd. This inflection, from which arise the follicles of the temporary teeth, is a direct prolongation of the buccal epithelium (epithelial pad or epithelial band). The inflection for the permanent teeth (which replace their predecessors) is a diverticulum from the primitive inflection. The follicles of those permanent teeth that are not preceded by temporary ones come from the mucous membrane in some cases, from the inflection of the tooth in front in others.

3rd. The inflection whatever its point of origin is invariably epithelial—it consists at the periphery of prismatic elements (of the Malpighian layer) in the centre of polygonal epithelial cells.

4th. The end of the inflection, which soon assumes the form of a club-shaped swelling, constitutes the enamel organ of the future tooth.

5th. The dentine bulb appears spontaneously in the deeper part of the embryonic tissue, and at a point directly contiguous with the swelling of the epithelial inflection.

6th. The enamel organ and the bulb are exactly opposed to each other, the former serving as a cap to the latter, a disposition which is found to be constant throughout all the periods of evolution which precede the appearance of the dentine and enamel, *i.e.* the future crown.

7th. The follicle wall springs directly from the elements of the bulb, starting from its base, rising over the sides to the summit of the follicle, where, reuniting it forms the follicular sac.

8th. The rupture of the epithelial inflection is simultaneous with the closure of the follicle, and from the moment the follicle loses all connection with the mucous membrane, the formation of the follicle is therefore complete from that moment.

9th. The phenomena of evolution of the follicles, whichever dentition they belong to, are identical in nature, the only noticeable difference depending on the exact point of origin of each epithelial inflection and the length of time occupied in effecting the various successive phases of evolution.

10th. The mode of origin of the dental follicle is identical with that of a hair follicle.

These ten conclusions have been almost universally adopted. Dr. Magitôt has furnished us with a historical summary of the progress of investigation in this department since the earliest times, which will also prove very interesting to all who care to follow the struggles of science in her efforts to arrive at truth.

The second memoir (1879) consists of an account of the morphology of the dental follicle in mammals, in which we find some notable differences from the opinions arrived at by Mr. Charles Tomes; on the whole, however, these authors are in accordance with each other.

Dr. Magitôt describes the dental follicle as an organ of an embryonic nature that continues to perform embryonic functions long after foetal life, remaining in full activity through infancy up to adult life. When its formation is complete its essential component parts are twofold: 1. A closed sac. 2. A certain number of "organs" contained therein.

The sac is a cellular or fibro-cellular envelope, adherent to the mucous membrane which surrounds it.

The contained "organs" vary in number, being never less than two or more than three; anatomically they are quite distinct. They are the bulb, the cement organ and the enamel organ.

The bulb is always present, it being the formative organ of the dentine, which is the fundamental tissue of all teeth; when only one other organ exists it is either a cement organ (elephant) or an enamel organ (man and carnivora). This would infer that the enamel organ is sometimes absent. Mr. Tomes, however, states that he has never failed to discover an enamel organ even in those animals that do not possess enamel capable of demonstration.

The relative relations of these three organs in a typical case are as follows : the bulb in the centre, the enamel organ exactly fitting over its convex surface like a cap, the cement organ surrounding both, and covered in turn by the sac (molars of herbivora).

The bulb is composed of the same elements as any other embryonic cellular tissue, free nuclei, fusiform and stellate cells covered by a layer of hyaline amorphous transparent matter (*membrana præformativa* of some authors). This is again coated over with the layer of cells called odontoblasts, and these as they develop extend into the thickness of the aforesaid transparent layer. The central tissue is extremely vascular and contains an abundant supply of fine sensory nerves, *the terminations of which are in direct continuity with odontoblast cells*. This fact M. Magitôt states very dogmatically, considering that excepting the observation of Boll there is no confirmatory evidence ; it seems, however, so likely that such a continuity should exist when we consider the undoubted sensibility of dentine and the analogy of other special nerve endings, that we have little doubt that the observation will be confirmed before long. Beneath the odontoblasts is a layer of stellate cells, called by M. Magitôt the substratum of the epithelium of the bulb.

These cells are, of course, responsible for the formation of the dentine, but as to the manner of that formation there is great difference of opinion. M. Magitôt holds that the materials for the formation of the dentine group themselves *round* the dentinal processes of the odontoblasts, each process remaining as the axis of each of the little canals that pierce the dentine. In the last memoir (1881) we shall see that he repudiates the theory of conversion, only allowing that the presence of the cell modifies the process. In his last edition, Mr. Tomes reiterates his opinion that the dentine is formed by direct conversion of the cells, from them, and from them alone. M. Magitôt's illustration is very seductive and his reasoning most ingenious, but the matter is certainly far from settled ; we shall return to this subject again.

The enamel organ is composed of a reticulum of stellate epithelial cells enclosed in an uninterrupted layer of columnar

epithelium. M. Magitot denies the existence of vessels in the enamel organ (of Dr. Lionel Beale). In discussing the internal epithelium he describes a "plateau" at the free or dentinal end of each cell; he further states that the elements which subsequently form the enamel prisms are formed and transude through this plateau "by a phenomenon of epithelium elaboration." This is, as Mr. Tomes points out (p. 157, 'Dental Anat.,' 2nd edit.), a revival of Kölliker's theory. Mr. Tomes himself maintains his original view that the enamel results from the direct conversion of the cell, relying mainly upon the evidence of the long Tomes' processes observable in the marsupials. Though M. Magitôt says there is no doubt that this diapedesis or exosmosis is the actual method by which the enamel is formed, we still feel considerable doubt upon the subject, since he offers us no explanation of the condition present in the growing enamel of marsupials, described by Mr. Tomes, which is apparently irreconcilable with his theory of excretion. So far we think Mr. Tomes makes out much the stronger case.

Lastly, we come to M. Magitôt's cement-organ, undoubtedly the discovery of himself and his collaborators, and which we find described in Mr. Tomes's last edition. M. Magitôt describes it thus: it is at first an embryonic tissue, very vascular, but unprovided with nerves, it undergoes two very distinct changes during its development, first it is transformed into an actual fibro-cartilage provided with chondroplast cells, secondly, as soon as the formation of the crown of the tooth is completed this cartilage undergoes a second transformation, namely, ossification, exactly resembling all other ossification throughout the body. Such is the process in the case of coronal cement; in those teeth that only possess radicular cement, the process of its formation is an ossification of the alveolo-dental periosteum, which is in fact derived from the sac itself.

M. Magitôt figures this cartilage as somewhat resembling fibro-cartilage, but it is difficult to understand why a temporary cartilage should be fibro instead of hyaline, as is customary in other ossifications.

Special Article.

A BIRD'S-EYE VIEW OF THE ODONTOLOGICAL SOCIETY'S MUSEUM.

[FOURTH AND LAST ARTICLE.]

AMONGST the "Dentigerous Cysts" we cannot do better than look at No. 100, which is a wax model of a portion of a human lower jaw expanded by a dentigerous cyst. Owing to the nature of the enlargement of the jaw not having been correctly diagnosed, the portion here represented was excised, when a canine tooth was discovered lying horizontally along the floor of the cavity. No. 101 is also interesting, showing the contents of a dentigerous cyst from the mouth of a Hindoo, aged twenty-five years; the cyst contained fifteen portions of tooth structure, some resembling imperfectly developed teeth whilst others are only irregular masses. No. 104 is a very good specimen of this disease in a sheep; it is the anterior part of the lower jaw. The specimen is interesting on account of its size; it has by pressure distorted the other side of the jaw, so that during life it might have been thought that it was not limited to one side, to which, however, it is really strictly confined. The membrane lining the cyst is preserved within it, as is also the misplaced tooth around which it was formed. We now pass on to No. 177, a very interesting specimen, being a lower maxilla (of an aged person) in which the development of the left half of the jaw has ceased at a very early age. Viewing the jaw from the front, the left side is seen to be greatly stunted, the horizontal ramus is apparently no longer than that of a child two years old, though posteriorly it is impossible to say where it ends and where the ascending ramus commences, for it gradually dwindles down to an upward curving spinous process; there is no sign of a condyle or articulating surface, and on examining its inner side no trace of the inferior Dental foramen. The vascular supply of this side of the jaw was derived from several small vessels entering the front of the jaw on its inner and outer aspect. No. 178 is also a lower maxilla in which the development has been arrested. This occurred in a stunted and unhealthy patient, who died at the age of sixteen years. As in the previous case, the left side was affected; the canal for the inferior Dental vessels

and nerve is very small; it does not emerge at the mental foramen but is lost in the bone. There is great crowding of the teeth to the right side as all of them are present except the wisdom teeth. No. 179 is a model of an upper and a lower jaw showing nearly total occlusion of the mouth due to cicatricial bands, after exanthematous necrosis.

"Ancient Instruments."—Although Dentistry has, within the last few years, made great strides in all its branches, one of its greatest advancements has possibly been in the instruments for the removal of teeth, for in viewing the cases containing ancient instruments we can hardly believe that some of the clumsy, heavy and complicated pieces of machinery were invented for the ultimate relief of pain, but rather that they were designed simply as instruments of torture: No. 1 will give us a fair example; it is an iron key, with a cross handpiece; the jaws are moved by means of a screw, so that they are adjusted to the neck of the tooth, which is then removed, but how we will not attempt to explain. No doubt the inventor could enlighten us, but as it was designed about the year 1600, in all probability his idea has died with him, so we must come to the conclusion that it was either removed intact or broken, and if the latter, the remains left in the jaw. No. 2 is another of the same type, although a little more complicated; in this the jaws are regulated by pressure of the palm of the hand on the cross handpiece. No. 3 is a key with a mahogany handle, the jaws being regulated by a screw, and somewhat similar to No. 1. We can then examine the more simple keys, until we arrive at those that were used only a few years ago. The elevators have also been greatly improved upon, some of the earliest (No. 30) being very clumsy. Among the forceps, Nos. 40 to 47 are the most complicated; some no doubt have done a great deal of work, whilst others have been made and very soon afterwards discarded. The remaining instruments are all worth attention, but space will not permit of a longer description.

Passing on to "Artificial Work," we see cases made by some of the oldest practitioners, as De Chemant, Delabarre, Chevalier Ruspini, &c., some dentures being made entirely of porcelain, some with porcelain bases and natural teeth, while others are constructed entirely of bone, and some pieces having natural and mineral teeth mounted on almost every conceivable material capable of being employed as a base. But to particularise some of the more important we cannot do better than look at No. 29. It is a primeval gold piece, mounted with natural teeth, made by Indian natives. No. 30 is also a case showing some very rude teeth mounted

on a wooden base. No. 32 is also interesting. It is the whole of the teeth of the lower jaw fastened together by gold wire, stated to have belonged to the Queen of Oude. No. 33 shows two smaller but similar aggregations of teeth, Indian native work. This last specimen was presented by Mr. Lloyd, of Madras, and we will take a few words from his paper, read before the Odontological Society in June, 1868, to show the way the operation is performed. He says: "To secure the four shaky incisors of either maxilla the operator would commence by passing several turns of thin gold or silver wire round one of the laterals near the margin of the gum and then carry it several times round the adjacent firm canine; having done this he passes the wire on to the central incisor and secures this to the *now* firm lateral, and so on until he reaches the firm canine at the other side, and thus the whole are supported by the two canines." He also says: "One curious circumstance connected with all this, is the fact that the fangs of teeth so tied become quite denuded of periosteum, and are to all intents and purposes foreign substances embedded in the gums for years; and yet they retain their colour, the integrity of their fangs, and freedom from caries in a remarkable degree." We may also look at No. 39, three natural teeth mounted on coral, and at No. 47, which is a set of teeth mounted on a tortoise-shell plate. Specimens Nos. 80, 81, 82, are very interesting, having all been swallowed and retained in the alimentary tract for some time; but as space will not permit of a description I must refer the reader to the 'Transactions of the Odontological Society,' vols. ix and x.

Amongst the "Tusks, healthy and diseased," we see some very fine specimens; and in Nos. 250 to 256 we find represented a class of disease that rarely if ever occurs in human teeth, and that is, abscess in the substance of the dentine. Of course, it is only natural to suppose that in the case of animals that are hunted as often as the elephants, numbers must be hit by a bullet but not sufficiently wounded to cause death; they therefore make off, but finally fall a prey to the hunter a few years later on, and thus it is that we find a great many tusks containing bullets that have entered the persistent pulp cavity, have set up sufficient irritation to cause an abscess, which instead of having any outlet has been entirely surrounded by developing dentine; and as the tusk grows and gets worn away, so the cavity containing the bullet proceeds further down the tusk. No. 260, a molar tooth of an Asiatic elephant affected with abscess, owing to a bullet being fired into the pulp cavity; bullet *in situ*. This is a different case to those mentioned above, as it presents all

the symptoms of suppuration of the pulp. The tooth is chiefly remarkable as an example of the extraordinary extent to which an inflamed pulp has burrowed about and eaten its way through the pre-existent hard tissues of the tooth; and what is rather remarkable is, that this absorbent action has gone on with the most activity at some distance in front of the injury. No. 261 is another very extraordinary case; it is the tusk of an elephant with a spear head lodged in a cavity surrounded by dentine in the pulp chamber. In this case the spear head was driven into the persistent pulp cavity and broken off, dentine then formed around it as in the case of the bullets.

We now come to the last page of the catalogue, and the first I shall select for our inspection is a water-colour drawing by Rolandson, 1787, "The Transplantation of Teeth," a rough description of which may not be out of place. On the left hand side of the picture, so that no time may be lost in the transference of the tooth, the lady of fashion sits side by side with the ragged boy from whom the "scion tooth" is being extracted. On the right a second operator is in the act of adjusting the transplanted tooth in the mouth of another lady, while behind them an old man admires in a looking-glass his mouth, in which the operation has apparently been completed. Going out of the door are two ragged young persons, one of whom is contemplating the coin lying in the palm of her hand, which has been received in compensation for the loss of her tooth. On the door is inscribed "Most Money for Living Teeth." The next is an old sign-board found at the back of pannels in an old oak room at Ottery St. Mary, Devon. It sets forth that "Thos. Smith, Glazier, Let Blood and Draw Teeth, Tea Kittels and Pots Buckels and Lantrens Cups To be Handeld Heare." The last is a grotesque plaster model representing extraction of teeth. This was found by Mr. Edwin Saunders in Paris and presented to the Society in 1871, on which occasion he gave the following description:—"The victim—for no other term could be applied to a patient in such a position—was, judging from the surroundings, the bread lying on the floor, without doubt a journeyman baker; and the operator was evidently a barbarian."—W. W.

ACCORDING to the 'Revue Scientifique,' Fontau has frequently found amongst the inhabitants of New Caledonia two supernumerary teeth, one behind each upper wisdom tooth. These teeth were provided with one or two cusps, and were found to exist in two out of twenty adult skulls examined.

Reports of Societies.

ODONTOLOGICAL SOCIETY OF GREAT BRITAIN.

ORDINARY MONTHLY MEETING, HELD 6TH MARCH, 1882.

S. LEE RYMER, Esq., President, in the Chair.

CASES OF INTEREST.

MR. ALFRED COLEMAN brought forward several cases of interest. The first was a model taken from an out-patient at St. Bartholomew's Hospital, showing a second or third molar protruding near the centre of the palate; the patient said that another tooth had previously presented itself in a similar position and had been removed.

The next showed a third left molar, in which the usual position of the fangs was reversed, the usually single palatine fang being external, and the double buccal fangs internal.

The next case was one which had occurred in the practice of his friend, Mr. Lyons. In 1869 that gentleman pivoted an upper central and a lateral incisor for a female patient. The result of the operation was perfectly satisfactory, and the teeth continued useful until quite recently, when, owing to an attack of acute periostitis and alveolar abscess, they had to be extracted. Mr. Lyons then found that a large portion of the roots had been absorbed, so that the pivots extended far beyond the apical foramen. This process of absorption must have been going on for a long time, and it was remarkable that it should have gone on to such an extent without any irritation being excited by the presence of a foreign body in the alveolus.

The next case was one which illustrated the danger of giving an anæsthetic and operating singlehanded. Mr. Coleman was removing two teeth from the mouth of a little girl, aged four years and a half. Just as he had extracted the first the gag slipped, and, as he was replacing it, the gentleman who was giving the gas for him called out that the child was not breathing. Artificial respiration was at once resorted to, and she soon came round; but he believed that had he been by himself he should have been too much occupied in getting the mouth open and removing the second tooth to notice the sudden stoppage of respiration, and the child would probably have died.

He then showed, on behalf of Mr. Lawrence Reed, a right upper central which he had extracted from the mouth of a gentleman aged twenty-five. It had been knocked out with

a hockey stick when the patient was a boy at school. After lying out of the mouth for about three hours it was replaced, soon became quite firm, and remained useful for twelve years. Signs of irritation then appeared and it was extracted; absorption of the root was found to have taken place to a very considerable extent.

CASE OF EPILEPSY FROM DENTAL IRRITATION.

Mr. HENRY MOON related a case of epilepsy cured by the removal of dental irritation which had occurred in his practice at Guy's Hospital. The patient, a girl, aged twenty-one, was brought as an out-patient to Dr. Hilton Fagge, and he, finding that her teeth were in a very bad state, sent her to Mr. Moon. She had suffered from fits since she was fourteen, and lately they had become so frequent as to reduce her almost to a condition of imbecility. On examining her mouth Mr. Moon found a third molar in process of eruption; he at once lanced this freely, and an immediate improvement seemed to come over the girl's previously blank expression. Some of the other teeth were extracted, and others stopped at the Dental Hospital; treatment by bromide of potassium was ordered at the same time. The result was that the fits entirely ceased from the day of her first visit to the hospital, and her mental condition rapidly improved. She was kept under occasional observation for more than a year, but no recurrence took place.

Mr. MARCUS DAVIS showed several ingenious appliances which he had found useful in practice, viz. a rubber-dam weight for operations on a lower molar, a small fork for applying and fastening the rubber dam, and a wedge, opened by a screw, for separating approximal surfaces.

Mr. MORTON SMALE showed a model, taken from a patient aged eighteen, showing an abnormally large lower bicuspid. He also described an automatic saliva ejector which he had fitted up in his own operating room.

Mr. WALTER COFFIN then read a paper on—

GUTTA-PERCHA IMPRESSIONS IN REGULATING.

His statement, made at the International Medical Congress, that gutta percha was the best impression material for regulating cases appeared to have occasioned surprise and had brought upon him a considerable amount of correspondence. He thought, therefore, that a short description of the points in which his mode of working differed from the ordinary procedure might be interesting. As the result of his experience, he could state that, besides its intrinsic advantages, gutta percha was the simplest and easiest material to use, the ordinary opinion to the contrary being due either to inferior

samples or to improper methods of use copied from one text book to another. Thus directions were given to melt it in a pot, and take it out in a spoon; to soften it before a fire or over a flame; to boil a lump of it in water till soft, press into a cup and heat the surface in a flame, &c., any of which processes would inevitably ruin the best gutta percha, so far as its fitness for impressions was concerned. So also the use of soap, vaseline, French chalk, &c., was quite superfluous. All that was required was a suitable cup, a good quality of gutta percha, and some hot and cold water.

The cups he used were made of sheet tin about one-twentieth inch thick, and with cast handles soldered on. The fit need not be exact, it was better to have one too large than too small; it should be everywhere perforated with rather large holes, and care must be taken that it is of such a shape that it can be bitten upon steadily without being liable to slip.

To take an impression, the cup having been fitted—chiefly as to the bite—and a basin of cold water provided, another is lined with a cloth and filled with boiling water. In this gutta percha in tolerably thin sheets is placed, and immediately softens; it is then lifted out on a smooth stick or glass rod and just dipped into cold water for a second. It may then be manipulated with wet fingers and placed in the cup. Becoming thus somewhat chilled the filled cup is put into the hot water again for half a minute, then just dipped into the cold and placed in the mouth, and the patient is told slowly and steadily to close the jaws about it. It should be kept in the mouth for a minute and a half or two minutes; it is then carefully released from the bite, quickly removed and at once placed in a basin of cold water, where it should be left until it is convenient to cast.

As to the material itself, the pink preparation made for many years by the Gutta-Percha Company, when freshly prepared, left nothing to be desired, if only not treated according to the directions sent out by the depôts. A careful analysis showed this to consist of 56.8 per cent. of very finely ground and pure oxide of zinc and 9 per. cent. of vermillion. Its working properties depended, however, on the quality of the gutta percha itself, which varies immensely in the wholesale market. A satisfactory sample is distinguished by the strong smell characteristic of the fresh gum, its great pliability, toughness and absence of brittleness when cold, and its freedom from stickiness when wet at temperatures below 212° F. After using a few times it becomes more plastic with heat and gives sharper casts, but with age and much use it rapidly deteriorates.

Mr. Coffin then went on to speak of the differences between impressions taken with plaster and with gutta percha, the chief being that as gutta percha shrinks on setting whilst plaster expands slightly, a plate made from a gutta-percha impression will fit the mouth very closely and is consequently more easily kept in place. Gutta percha was also useful for copying models; the latter should be thoroughly dusted with French chalk and then the model and gutta percha pressed together for a minute in cold water: such copies were very useful for reference or comparison.

In the discussion which ensued, Dr. WALKER said he had been indebted to Mr. Coffin for some instruction in his methods of making and applying regulating plates, and had obtained most satisfactory results in the five or six cases in which he had had an opportunity of using them.

The PRESIDENT and Mr. COLEMAN said they had tried gutta percha, but not according to Mr. Coffin's method, and had abandoned it in favour of plaster on account of the unreliable results obtained. They should now try it again, since it was vastly more agreeable to the patient than plaster.

The discussion was continued by Messrs. F. WEISS, STOCKEN, and others, after which Mr. COFFIN replied, and the President adjourned the meeting.

ODONTO-CHIRURGICAL SOCIETY.

ORDINARY MEETING, FEBRUARY 9TH, 1882.

JOHN SMITH, Esq., M.D., F.R.C.S.Ed., President, in the Chair.

THE minutes of the previous meeting were read and confirmed.

CASE OF LUPUS.

Mr. WATSON exhibited a patient who had been operated on for lupus, and gave particulars of the case. He said:—"Before introducing the patient I will give you the history of the case and the pathology of the disease. The patient is a man between fifty and sixty years of age, whose nose, upper lip, and anterior portion of jaw as far back as the first premolar, with a wedge-shaped portion of the palate process extending as far back as the second molar, have been

destroyed by lupus, otherwise called rodent ulcer. This disease is closely allied to the cancers, and expends its force in destroying every tissue attacked, but differs from true cancer in respect that its cells are less in size, and that it does not spread by means of the lymphatics or by secondary growths. It usually begins on the face or head as a dry wart, which, after having frequently desquamated, begins to ulcerate, and slowly but regularly destroys all the tissues, soft and hard, producing, as in this case, a most disgusting and horrible deformity. The patient has been operated upon some six times for the removal of the disease, the last time by Dr. Chiene, about seven months ago, at the infirmary. In October Dr. Chiene sent him to me to see if I could do anything for him in the way of artificial substitutes for nose and jaw, and I have succeeded, after great difficulty, in making up the jaw and palate by means of a hard vulcanite plate attached to the only three remaining teeth left in the mouth, and an artificial nose and lip, also of hard vulcanite, which is fixed to the plate by a special apparatus, the nose and lip being painted as near as possible to the colour of the face. He has been wearing them since December last, with great comfort and decided improvement in his personal appearance, enabling him to eat and speak comfortably, which was an impossibility before, as well as protecting the delicate mucous surfaces of the nasal cavity. (The patient having now been introduced.) To appreciate the difficulties of the case, you will notice the mouth cannot be opened except to a very small extent, owing to the contraction of a portion of skin which was brought down from the forehead to fill up part of the cheek destroyed by the disease, this flap of skin having been brought over the left eye, closing it up. This operation was performed by Professor Lister. The only way feasible that I could take a model of his mouth was to take it in two halves, but owing to the smallness of the space between the two jaws I was unable even by this method to get an accurate model, and had to manipulate it considerably afterwards to make it anything like correct."

Mr. BIGGS said this is a case of very great interest, and not a little instruction. It is one of those obscure kinds of cases which we rarely have an opportunity of inspecting; and on that account, if no other, I think the Society is very deeply indebted to Mr. Watson for the privilege he has given us of examining his handiwork upon this patient. I can readily conceive the difficulty to be overcome in procuring an accurate impression, owing to the hard cicatricial margin of the orifice, and the difficulty of opening the

mouth or depressing the lower jaw consequent upon that. There is a great amount of ingenuity displayed in the construction and adaptation of the denture and the nose under these trying circumstances. Yet it occurs to me that they are capable of some improvements; for instance, the nose is too small, and not of the type characteristic of the features. The lip is much too rigid and stiff looking. A little training in the art of sculpture would be of immense advantage in the modelling of such cases. Then the nose and lip are much too heavy. I would consider soft rubber much better adapted for such a purpose, especially for the lip. These, however, are mere suggestions, and not at all intended to deprive Mr. Watson of the glory he has achieved in bringing so difficult an undertaking to so successful a termination; and, for my part, I beg to thank Mr. Watson very heartily for the extreme pleasure it has afforded me to be present to-night to witness this exhibition.

The CHAIRMAN thought the Society should express its obligations to Mr. Watson for the interesting case brought under its notice by him. The disfigurement and lamentable condition of a patient, such as he had shown to-night, as the victim, whether of lupus or rodent ulcer, was of an extremely sorrowful nature; and such an apparatus as the admirable one contrived by Mr. Watson was an unspeakable boon to the sufferer. So far as the material employed, and the construction of the apparatus itself was concerned, it must in general be determined by the special nature and condition of the case. In this instance, any defect in the colour or form of the new nose were of a comparatively trivial nature, and the main objects sought for had been gained.

The SECRETARY in the absence of the author, then read a paper entitled "Surgery Talk; or, Conversations between Patient and Operator," by Mr. John Laws, of Weymouth, which will be found at p. 264 of the present issue.

At the conclusion of the reading, the CHAIRMAN said he felt sure the Society was much indebted to Mr. Laws for his communication, just read by Mr. Macleod. In a society of this nature, where the papers are, as a general rule, of a strictly scientific or practical nature, it was refreshing, and a pleasant and welcome diversity, to hear a contribution such as that of to-night. Perhaps in no way could a speaker more effectually command the attention of his hearers than by assuming them to be placed in the circumstances he may be describing. He in this manner appeals to their feelings and commands their sympathy, with all the force of the *argumentum ad hominem*. Their minds became, as it were,

en rapport with his—they enter into the difficulties portrayed by him—consider the remedies he suggests, and actually feel relieved if these seem to meet the requirements of the case. Now this is very much the mode adopted by Mr. Laws in conveying the information afforded in his paper, and if beneficial ends can be achieved in an occult and hidden manner, and lessons carried home to the listeners insensibly to themselves, while they have been entertained by an interesting and agreeable discourse, they will have been afforded a combination of business and pleasure, amusement and instruction, of a very valuable and acceptable kind. Perhaps on reconsideration, Mr. Laws might be inclined to modify his views on some more purely medical subjects introduced into the paper. There is always a danger of getting into difficulties in merging the Dental into the medical practitioner, and the question of nursing and its results, not merely on the teeth but on much more important organs, might, he thought, be safely left in the hands of medical men. The paper of Mr. Laws merited the thanks of the Society.

Mr. BIGGS said the paper just read is perhaps an exaggeration and a burlesque, to follow which at all literally would be simply absurd; nor do I think Mr. Laws would at all expect or desire it. Yet there are, no doubt, a few hints and suggestions in it over which we might profitably ponder. That a vast number of our patients injure their teeth and health through ignorance there can be little doubt, and that the education of their patients on such subjects must in the meantime, to a great extent, devolve upon the Dentist. From some cause or other, American patients have a much higher appreciation of Dental work than those of our own country. I was very much struck with an instance of this quite recently. A lady came to me complaining of a lower wisdom tooth, from the pain of which she had lost her sleep the previous night, and which she was not aware was decayed a few days before. She said, "I guess it has not got to come out, it must be plugged." I asked her to allow me to look at it, and, to my surprise, there was nothing standing but the *posterior wall*. I told her the unsatisfactory state of affairs, and that I thought it would be better out. She said, "That tooth has got to be plugged." I dressed the tooth. She came back in a day or two, and that tooth was plugged with amalgam, and will probable be there for many a long day to come. But, with our own people, it is often a matter of the greatest difficulty to persuade them to submit to having teeth filled which could be filled without pain, and with every certainty of success; but it is a diffi-

cult matter to do two things at once, and do them well; and, for my part, I prefer to say whatever I consider of importance first, and then give the operation my undivided attention.

MESSRS. MACGREGOR, FINLAYSON, and WILSON having also expressed their opinions,

The SECRETARY, on behalf of Mr. Laws, thanked the Society for the favorable reception they had given to his paper. Although he did not speak with the authority of Mr. Laws, he thought he would not be misrepresenting the author when he asked the Society to accept the illustrations not in their literal sense, but as typical of the form, or at least direction, into which we should endeavour to lead our surgery conversation.

CASES OF INTEREST.

Mr. WILSON exhibited models of the upper jaws of two ladies (sisters) in both of whom the lateral incisors were suppressed. In these the temporary series was quite normal. As showing the hereditary tendency of such depression, he had been informed that the same thing was seen in a third sister, and also in their father and one of his sisters. He also showed the model of an upper jaw, in which the *second* bicuspid was much smaller than the *first*. This abnormality seemed very uncommon, as he had only met with one other case.

REPLANTATION.

Mr. WATSON said: I have here two interesting specimens of replanted teeth. No. 1 was replanted February, 1874, in the mouth of a boy aged seven years at that time. The patient was attacked by measles a few days after the operation, and yet the tooth did very well, and was quite firm in little more than a month. I extracted the tooth last September, more to see what condition it was in than anything else, as the tooth was comparatively firm, and might have lasted two or three years longer. It had thus been replanted about seven years. Upon making a microscopic examination of the tooth I discovered numerous excavations (*lacunæ Howship*), produced by the multiform osteoclast cells derived from degeneration of the cellular elements of the periosteum. Of the other cases shown along with this one in 1874, some have failed, and others have been lost sight of through the patients removing to other parts of the country. No. 2 was replanted May, 1880, and had got so loose last September that the boy pulled it out himself with his fingers. The dentine and cementum of the roots in this case also

have numerous excavations on them caused by the absorption cells. The experience I have had of replantation leads me to think that this operation will only be useful in exceptional cases, as the roots of the tooth are sure to be destroyed sooner or later by the destructive action of the osteoclast cells. I have only tried one case of tortion, that of an upper lateral incisor, which, when I was busy twisting, the boy took hold of my hand and pulled out. I just reinserted it at once to see if the nerves and vessels would unite again, as I have seen asserted they do. In the course of a few weeks a large abscess appeared over it, showing that in this case at all events they had not done so.

The CHAIRMAN remarked that the subject of replantation or transplantation of teeth was one beset with many difficulties in determining its value as a surgical operation. It had been revived from time to time for the last hundred years, but had never seemed to maintain its ground as a reliable mode of treatment. Cases might appear successful for months after its performance, but within a few years the majority of such cases turned out to be unsatisfactory. He admitted that perfect success was in some instances attained. But, from his own experience—and he had devoted some attention to the subject between twenty and thirty years ago, as well as much later—he had not much confidence in it. At one time he tried the lifting of teeth from their socket, and replacing them, without their absolute removal, once advocated as a cure for toothache. He had also rotated the incisors in their sockets for irregularity in position ; but he now would have much hesitation in adopting either modes of practice. The absorbed appearance of the fangs in the teeth shown by Mr. Watson was interesting and was no doubt due to the same cause as atrophy of muscles and other tissues following division of a nerve, as in many cases nerves never unite again after being divided, and lead to a number of curious effects upon the nutrition of parts supplied by them, as in division of the ulnar nerve in some cases, division of the fifth pair, and in other examples well known in pathological literature.

Mr. MACLEOD said that, personally, he was much indebted to Mr. Watson for bringing these cases before the meeting, as they were a confirmation of the opinion expressed by himself when Mr. Watson previously exhibited these other cases in the mouth as successful results of replantation. At that time Mr. Watson was not inclined to entertain the idea of the possibility of failure, as the operations had been conducted with care, under strict antiseptic surroundings. But now, finding his then convictions overturned by facts which

could be seen and handled, he brought his failures before his fellow associates, and honestly avowed his conversion. The opinions which he (Mr. M.) then held, and which were based upon personal experience and experimentation, and recorded in their 'Transactions,' were :—1st, That replantation of a tooth which had been the subject of alveolar abscess was never permanent; 2nd, that even where successful for a few years the game was not worth the candle; and 3rd, that although replantation might occasionally be indulged in as a temporary expedient, it would never take its place as a recognised operation in Dental Surgery. Cases which had been published between that date (1874) and this only tended to strengthen these opinions, and as these recorded cases had been operations by men of undoubted knowledge and skill, no room was left to gainsay the unsatisfactory nature of replantation.

Dental News.

DENTAL HOSPITAL OF LONDON.

THE Annual General Meeting of the Governors was held at Leicester Square, on March 9th, 1882, Sir Charles McGrigor, Bart., in the Chair.

The Committee of Management in presenting their twenty-fourth Annual Report, drew attention to the increasing interest felt by the public in the Hospital as shown by the Subscription List, in which the proportion of lay to professional contributors was larger than usual.

A list of the principal donations received during the year 1881 was read, and it was stated that the amount received from the Metropolitan Hospital Sunday Fund was £56 5s., while the Hospital Saturday Fund awarded them £28 14s. 10d. for 1880, and £34 11s. for 1881; the award for 1880 not being received before January, 1881. The donations of Life Governors during the year amounted to £498 15s., the General Donations to £140 7s. 7d., whilst the Annual Subscriptions amounted to £581 9s. 6d. The Committee thought it a fit subject for congratulation that, for the first time in the history of International Medical Congresses, a Section was accorded to Dental Surgery in the

Congress of last year. But with this prominent honour came corresponding responsibilities, and the Committee could not too strongly impress upon the Governors that if our country was to retain its position, the educational facilities of the Hospital must be largely increased; and that, owing chiefly to the costly nature of the materials, this could only be done by a large expenditure of money.

The Report of the Medical Committee, which was next read, stated that the past year had been one of satisfactory progress, as the following statistics would show :

*Report of Cases treated at the Dental Hospital of London,
from January 1st to December 31st, 1881.*

Extractions	{ Children under 14.....	5,462
	{ Adults	8,840
	{ Under Nitrous Oxide.....	4,009
Gold Stoppings		1,461
White Foil ditto		100
Plastic ditto		4,710
Irregularities of Teeth treated Surgically and Mechanically		886
Miscellaneous Cases		3,545
Advice Cases		1,786
		30,799

Compared with the table furnished last year, the above statistics showed an increase of 2,231 cases treated, and further—and this was highly satisfactory—the increase consisted chiefly in the conservative branch of operations. “Of the class who apply at the Dental Hospital,” the report continued, “the majority will always consist of persons demanding immediate relief from severe suffering, and who cannot afford the time either for preventive measures or lengthened treatment, so that the statistics must ever show an undue proportion of extractions; nevertheless, it is encouraging to find that the poorer classes are becoming alive to the importance of saving their teeth, to which end there was but small opportunity before the establishment of this and kindred institutions.”

After alluding to the resignations of Mr. C. J. Fox, Mr. Ashley Gibbings, and Dr. Louis, and the appointments of Mr. D. Hepburn, Mr. A. S. Underwood, and Mr. C. E. Truman, the Committee passed on to speak of the general condition and prosperity of the School. There had been a large increase in the number of students, and the Committee had found it advisable, in order to increase the efficiency of the practical instruction, to appoint an additional Demonstrator. That office was now ably filled by Mr. John Ackery, a former distinguished pupil at the Hospital. In conclusion, the Staff gratefully recognised the permission

accorded by the Managing Committee to the Council of Section XII of the International Medical Congress, during its sitting in last year, for the use of the operating rooms of the Hospital, for the purpose of practical demonstrations and operations by eminent foreign and English Dentists, and teachers of Dental Surgery; and they also thanked the Managing Committee for the promptness with which their requirements, for the efficient performance of their duties, and the successful working of the Institution, had been always met.

The reports were unanimously adopted, and the meeting separated after the usual votes of thanks.

NATIONAL DENTAL HOSPITAL.

THE Annual Meeting of Subscribers to the National Dental Hospital was held on Wednesday, the 1st inst., at the hospital, 149, Great Portland Street, when there were present Mr. Rymer, Mr. Sims, C.C., Mr. Oakley Coles, Mr. Cheesewright, Mr. Williams, Mr. Weiss, Mr. Gaddes, Mr. Steele, and numerous other supporters of the institution. The Secretary read a letter from Lord Enfield regretting his inability, owing to a heavy pressure of political work, to preside at the meeting as promised, and expressing his continued interest in the welfare of the institution. Mr. Kempton was called to the chair.

The reports submitted to the meeting showed that while the annual subscriptions and donations had fallen off by over £100, the payments by patients had increased by over £50, and the number of cases treated were 3494 in excess of those treated in the previous year. The total number of cases treated during the year had been 20,653, making since the foundation of the hospital 148,807, and the Committee urged that these figures proved that the benevolent public generally do not appreciate the great necessity of Dental hospitals, while the poorer classes prove them to be invaluable. A loan of £250 had been obtained for the additions and alterations to the premises necessary for the proper reception and treatment of the increased number of applicants, and the public were asked to come forward and help to defray this debt.

The question, frequently discussed and urged by the Committee on previous occasions, arose as to the desirability of the amalgamation of the two Dental hospitals in London, and the following formal resolution, moved and

seconded by Mr. Cheesewright and Mr. Lee Rymer, was unanimously passed :

“That, in the opinion of this meeting, it is desirable an amalgamation of the two Dental hospitals be made with a view to economy of administration and increased general efficiency.”

The hearty thanks of the meeting were accorded to the Treasurer, Committee of Management, Medical Staff, Auditors, Secretary, and Chairman, and the proceedings terminated.

Correspondence.

[We do not hold ourselves responsible for the opinions expressed by our Correspondents.]

MEDICAL DIRECTORY *v.* DENTISTS' REGISTER.

To the Editor of the 'British Journal of Dental Science.'

SIR,—In your admirable leading article of the 15th ult., you have surely struck the real key-note of progress. I think that it can hardly be doubted that one of the most practical measures for “purging the Register” would be accomplished could the spirited and liberal proprietors of the ‘Medical Directory’ be prevailed upon—for the general good—to change their present “List of Licentiates in Dental Surgery” into a *Dental Directory* on the same plan and *as a part of* the ‘Medical Directory.’

In the old time, before the Dentists Act, they took the only possible line of demarcation to avoid the unenviable notoriety of making invidious distinctions, by determining who were and who were *not* Dentists, but now that the law has decided that point their old difficulty has departed.

There is an anecdote of the late Roland Hill's concluding a charity sermon by saying that as he “wanted a liberal but *voluntary* collection, arrangements had been made that plates should be held at all doors *except the west door*,” and begged that, “to avoid confusion, those who did not wish to subscribe would leave by that door.” Very few were said to have availed themselves of his thoughtful care for their scruples. I cannot help thinking that were the names of *all Dentists* (with their qualifications) to be found in the ‘Medical Directory,’ on the table of every medical man in the kingdom, instead of *only* in the ‘Dental Register,’ which not one in a thousand would ever see, a tremendous impetus

would be given to every unqualified practitioner—worth his salt—to raise his status, and so tend to “purge the Register,” by the process of upward levelling, and that the west door would be little used. The fierce light of publicity would do more to that desirable end than all the weight of the influence, ability, and money of the British Dental Association, backed by all the majesty of the law they can bring to bear upon the ragged fringe, that of necessity must in the beginning sully the Register.

The helping hand of brotherhood stretched out to those who have the *will* but lack the *means*, would soon tend to raise the meritorious. The destroying hand of time *alone* can expunge the names of the really unworthy, whilst in the interval the judicious public would have a ready guide to aid their choice. The Dental Association could thus make good and profitable use of its energy and funds, which latter would no doubt pour in with much more liberality than at present, when so many consider they would be but wasted in a quixotic and fruitless legal crusade. It might be profitably borne in mind that the ranks of our profession were formerly recruited from very various sources, nevertheless some of our brightest ornaments rose from least expected quarters.

The Medical Council have, I am glad to say, been most liberal in their construction of the Act, and admitted many who but for their discretionary power would have been debarred from ever practising the profession, to learn which they had devoted the most important years of their lives, although at the time of their entering upon it they had a fair prospect of ultimate success. Depend upon it there is much material here that will in no wise disgrace the profession if only help and encouragement be offered where needed.

My idea as to the value of the ‘Medical Directory’ *v.* the ‘Dentists Register,’ seems fully borne out by the statement in your last issue, that over a hundred more licentiates are entered in the former than the latter. You ask: “Why on earth do men take licences if they do not care to register them?” May not the answer be, that in the former it is likely to be seen often, whilst in the latter *practically never*.

I am, &c.,

GILBERT WALKER.

THE NEW DEPARTURE FILLINGS.

To the Editor of the ‘British Journal of Dental Science.’

SIR,—All honour to our American brethren, Messrs. Flagg, Chase, and Kingsley, for the noble stand they have made against the exclusive advocates of gold fillings, as there can

be no question that there is more prejudice in America against amalgam than there is in this country. But the reaction has fairly set in, and it will not be long before the most sceptical are convinced of the great superiority of amalgam over gold, more especially in the saving of fragile teeth and hollow shells, which to fill with gold is simply labour in vain.

There are hundreds of Dentists, however, in this country, to whom the so-called new departure is nothing new, and who have been quietly working away for the benefit of their patients, saving their teeth without causing them unnecessary pain or expense, and convinced that it is most cruel and unjust to make a patient suffer and pay for gold fillings when a good amalgam would give better results with a minimum of pain and inconvenience to both patient and operator. So that after all the new departure is simply what has been the practice of most sensible men in the mother country, who, seeing the failure of gold in certain cases, have had the common sense to use what they have found to give more satisfactory and durable results. As to the combination of gold and amalgam spoken of by Mr. Kingsley, it is a very old method in this country, which has fallen into disuse, but it is one which gives good results, and used to be in great favour with some of our oldest operators here. As he truly says, no matter how skilful the operator may be, gold fillings will give way sooner than amalgam or a combination of gold and amalgam.

I am, &c.,

JAMES HARDIE.

Alloa.

AN ASSISTANT'S GRIEVANCE.

To the Editor of the 'British Journal of Dental Science.'

DEAR SIR,—If you will permit me, “through the medium of your valuable Journal” to call attention to what I consider a great injustice done to the assistants of our profession, I shall be obliged.

It is that of employers requiring an assistant to enter into an agreement not to commence practice on his own account within a radius of a stated number of miles under a forfeiture of a sum of money *which in my experience I have generally found to be fixed at £100*. During my experience, which extends over a period of eight years, it has been my lot to be with numerous gentlemen, and I have found, generally speaking, that the same selfish feeling has been predominant in all of them, and in every instance the question of entering into such an agreement has, at the time of engagement, not been mentioned; but in the course of a few weeks, when comfortably settled, it has been brought up and, at the same

time, without offering a guarantee of a situation for a period that would act as a recompense for entering into such an agreement.

Now, Sir, I ask, is it right that gentlemen enjoying the benefits that result from a good practice should by such means endeavour to obtain a monopoly, and at the same time seek to debar an assistant from commencing practice in any place that he might think fit.

I should like to have the experience of other assistants in this matter, and I would call upon them, one and all, to refrain from countenancing what is, to my thinking, an unjust and unfair requirement.

Apologising for troubling you, and hoping some one with more experience will take up the subject, I am, &c.

AN ASSISTANT.

THE STORAGE OF NITROUS OXIDE.

To the Editor of the 'British Journal of Dental Science.'

SIR,—I am experiencing great difficulty in compressing nitrous oxide gas from the gasometer into the iron bottles. I have a powerful pump, and, so far as I am able to judge, there is no defect in it, but although, when it is worked, the gas leaves the gasometer, it most certainly does not get into the bottle. I have diligently searched for a leak but can find none.

Have any of your subscribers, who manufacture their own gas, met with a similar difficulty; if any have, and will kindly inform me how it may be overcome, I shall be truly grateful and obliged.

I am, &c.,

T. RUSSELL WHATFORD.

25, Eldon Square, Newcastle-on-Tyne.

MONTHLY REPORT OF CASES TREATED AT THE DENTAL HOSPITAL OF LONDON,

FROM FEBRUARY 1ST TO FEBRUARY 28TH, 1882.

Extractions	{ Children under 14	446
	{ Adults	625
	{ Under Nitrous Oxide	355
Gold Stoppings.....		155
White Foil ditto		11
Plastic ditto.....		508
Irregularities of the Teeth treated mechanically.....		65
Miscellaneous Cases.....		417
Advice Cases.....		135

Total..... 2717

WILLIAM HERN,

House Surgeon.

MONTHLY REPORT OF CASES TREATED AT THE NATIONAL DENTAL HOSPITAL,

FROM FEBRUARY 1ST TO FEBRUARY 28TH, 1882.

Number of Patients attended	1335
Extractions { Children under 14.....	308
{ Adults.....	508
{ Under Nitrous Oxide	79
Gold Stoppings	52
Sheets of Gold used, independent of Pellets.....	60
Other Stoppings	328
Advice and Scaling	85
Irregularities of the Teeth	47
Miscellaneous.....	217
Total	1624

FRED. WM. BATE,

House Surgeon pro tem.

Communications have been received from Messrs. James Hardie (Alloa), Thomas F. Cullingford (Denmark Hill), Gilbert Walker (London), Frank Joy (Cardiff), W. S. Burrows (London), J. T. Pycroft (Dorking), F. W. Bate (London), W. Hern (London), E. J. Mara (Scarborough), Hon. Secs. of Odontological Society, F. R. Whatford (Newcastle-on-Tyne), G. A. Ibbetson (London).

BOOKS AND PAPERS RECEIVED.

- 'Dental Office and Laboratory.'
- 'Vierteljahrsschrift des Vereins Deutscher Zahnkünstler.'
- 'Cape Argus.'
- 'Trance and Muscle Reading.' By Dr. G. M. Beard.
- 'L'Odontologia.'
- 'Le Progrès Dentaire.'
- 'Transactions of Odontological Society.'
- 'Pharmaceutical Journal.'
- 'Lancet.'
- 'Medical Times and Gazette.'
- 'British Medical Journal.'

NOTICE.—We desire that it may be clearly understood that our pages are open to all for free expression of their views on matters connected with our profession. We only ask for terseness of expression and MODERATION IN TONE.

When otherwise unobjectionable, difference of political or other opinion will never be regarded by the Editor as a disqualification for the admission of any communication to the pages of the **BRITISH JOURNAL OF DENTAL SCIENCE.**

British Journal of Dental Science.

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LONDON, APRIL 1, 1882.

VOL. XXV.

ADDRESS DELIVERED AT THE STUDENTS' SOCIETY OF
THE DENTAL HOSPITAL OF LONDON.

By ARTHUR S. UNDERWOOD, M.R.C.S., L.D.S.,
PRESIDENT.

GENTLEMEN,—In nominating me your President you have imposed upon me the most pleasant duty that I can imagine. I will not tell you about my unworthiness to fill the office, firstly, because it is an uninteresting topic, and, secondly, because you will all find it out too soon. I will not tell you of the merits of my predecessors because you have all found them out long ago. I would rather tell you of the pleasure and pride with which I shall do my best to deserve your confidence.

It seems to me only the other day that I was elected a member of this Society, and I remember that I showed that very day that I recognised the duties of membership by reading a paper.

From that time I have been bound to our Society by the strongest ties. Friendships that will last as long as I do have grown out of these pleasant meetings. The "jolliest" (I use the word advisedly), the jolliest times in our three score years and ten are, I believe, what are called "student days," they are the spring of a working man's life, and I count my enrolment a few years ago as a member of this Society as a kind of Valentine's day in my existence.

My last recollection of active connection with this Society is our first monster *conversazione*, when some very

energetic and social spirits, among whom were conspicuous Messrs. Lawrence Read, Noble, Ackey, Stewart Hepburn, and McCall and myself tried to make the funds of the Society fly in an entertainment which, by its magnificence and brilliancy, quite astonished and took away the breath of our graver parent Society, the Odontological. It is a coincidence that my next official visit was on the occasion of another relaxation of the same brilliant nature. I am afraid that this may appear as if I had an undue taste for relaxation and *conversaziones*, and this reflection reminds me that I have a short word to say about the serious business of the Society. Fond as we all are of work, the most assiduous of us is always fondest of work of his own choosing, work that he is not obliged to do, work that has nothing to do with that solemn uncomfortable edifice in Lincoln's Inn Field, work that one need not get signed up for. This is the feeling that has found its outward expression in the existence of our Students' Society. In the other work, we are the slaves of Gray and Kirk, big Tomes and little Tomes, and Salter. Here we breathe freer air, we have opinions of our own, we boldly bandy words with these revered authorities, we are a republic, we dissect our tyrants' opinions, and woe betide them if we catch them tripping. If there is in us the power and the perseverance to add to science, this is its cradle, or rather its nursery. Outside we must believe what is told us, here it is best to take nothing for granted. I would urge upon you the importance of considering and sifting and working out the views which we now receive as gospel in our special branch of science, remembering, should any hint that it is a presumption to doubt or contradict our elders, the old saying, that a dwarf on a giant's shoulders sees farther than the giant. In ten years' time our science will be very different from what it is now, and it will be some of you who will be in the proud position of having led us one or two steps nearer the truth.

The microscope is every day becoming more and more powerful in digging out the hidden secrets of pathology and histology. High powers are no longer delusive agents, but

reliable demonstrators of fact. The great rock to avoid in the pursuit of a theory is the danger of allowing the wish to be father to the thought; investigations should be conducted for the impartial hunting out of truth, never with the barer object of proving a preconceived theory. This hunting of truth is the most exciting sport imaginable, and I may say, from personal experience, that when first you see clearly a plain incontrovertible demonstration of a hitherto unobserved fact you are repayed for years of failure and disappointment. But one more word, the time of actual student life is short, and in that short time the picture of your future life must be sketched in the rough, you must show here the sort of stuff you are made of; the judgment we pass upon each other here is seldom believed afterwards, we must show we are in earnest whether it be in writing papers, or in seeing patients, or in organising *conversaziones*, and then we shall look upon that judicious mixture of social festivity and conscientious work known as student life with a very pleasant recollection; and may I hint that those who have no lighter side to their student life are seldom great successes in graver matters. The Duke of Wellington said his best soldiers were dandies, and I daresay among the leading spirits of *conversaziones*, sports, or general festivity, we should find most of those who do credit and honour to this our alma mater in its provinces of hard work. I cannot thank you, gentlemen, for the honour you have done me better than by trying, however poorly, to deserve it. The words that express such thanks have all been used up by previous Presidents, yet the feeling that gives rise to them are as fresh as ever, and I hope that they may find expression many times during the many pleasant evenings we are about to pass together.

THE ODONTOLOGICAL SOCIETY OF GREAT BRITAIN, 40, Leicester Square.—Ordinary Meeting, Monday, April 3rd, 1882, at 8 p.m. Business: Casual communications by Messrs. J. S. Hutchinson, Canton, Verrier, &c.

ON FACIAL NEURALGIA.*

By H. L. ALBERT.

MR. PRESIDENT AND GENTLEMEN,—The subject of my paper is one that cannot claim novelty for its recommendation, as it has been read in this room several times, and I feel that in bringing it before you to-night I am trespassing on a ground that has been trodden by many, more eloquent and more acquainted with the subject than myself; yet there are reasons for which I have selected it. First, it is a disease which cannot be too fully discussed on account of the comparatively small amount that is known concerning it; secondly, it ought to fall almost exclusively within the province of the Dentist, and nothing will repay him more for the time and trouble he has expended on learning his profession than the gratitude of the patient whom he has relieved from this painful disease, perhaps merely by the extraction of a tooth; thirdly, it is a disorder which seems greatly on the increase; and lastly, the reason that should occupy our minds in preference to self-aggrandisement or the love of attaining notoriety, viz. that of relieving the sufferings of our fellow-creatures.

Neuralgia was apparently known to the ancients, Hippocrates having most graphically described its symptoms, whilst the contemporary Arabian authors had evidently by their writings no insignificant knowledge of the subject. In its descent to us it has received a variety of synonyms. Hippocrates designated it *sciatica*, and since his time toothache, frontal headache, disease in the maxillary antrum, *clavus hystericus*, and even rheumatism and gout, are terms that have been respectively applied to it. It has also received the better sounding names of trifacial neuralgia, *dolor faciei Fothergillii*, *prosopalgia*, and lastly, the more common one of *tic dolooureux*.

It is essentially a nervous disease affecting the fifth and

* Read before the Students' Society of the Dental Hospital of London.

facial nerves, but our anatomical studies teach us that the latter receives its sensory fibres from the former, so that facial neuralgia may be said to involve only the fifth nerve, and in that situation where its branches inosculate with each other or with other nerves, as below the infra-orbital foramen, where the palpebral, nasal, and labial branches of the second division of the fifth join those of the temporo-facial branch of the portio dura of the seventh.

Sydenham regarded it as a symptom of hysteria, and no doubt this is often the case, but it must not be forgotten that hysteria often occurs without neuralgia, and conversely, neuralgia has often a more serious causation than hysteria. Trousseau believed it to be a symptom of chlorotic cachexia.

In its geographical distribution, England, France, Italy, Germany, India, Persia, and China share it alike; only in one country, the West India Islands, does record seem to denote it more predominant.

Of the predisposing causes, age, sex and temperament stand out pre-eminent; like many other diseases, neuralgia seems limited to certain periods of life, only affecting adults, and this is not to be wondered at, seeing that the cerebral centre and nervous system generally have then attained their maximum development. According to Chapponière's statistics, out of 119 cases 73 were found to occur between the ages of twenty and fifty; cases have however, been recorded in children under ten years of age, whilst, on the other hand, Thouret relates two cases whose united ages were 163! Haughton and Downing have likewise attended patients who had attained extreme old age.

If we can place any reliance upon statistics, the male sex seem more predisposed than the female; this predominance, however, is but slight from my own small experience. I have found the acute form to prevail in the female and the chronic in the male.

With regard to temperament. As may naturally be expected the nervous and nervo-sanguineous are especially predisposed, though the bilious is not exempt.

Malaria has a vast influence, and it is a matter of common experience that neuralgia is very frequent in malarious

districts ; and to end the list of predisposing causes, anything that tends to debilitate the system, as anæmia, dyspepsia, profuse discharges, and excessive venereal indulgences, may be mentioned. A luxurious and idle life is often followed by years of the most agonising neuralgic pain, but, taken as a rule, neuralgia affects the aristocrat as much only as the plebeian, the rich only as much as the poor.

Of the exciting causes, caries and necrosis of the maxillæ may be summarily dismissed, the most important being those numerous diseases to which the teeth are liable. The disorder of the teeth upon which neuralgia is most dependent for its origin is undoubtedly caries, notwithstanding Dr. Anstie's statement to the contrary. How many hundreds of cases do we know to have been absolutely cured by the removal of carious teeth? The presence of caries need not be limited to the side on which the neuralgia occurs, nor does the presence of caries in the teeth of one jaw interfere with the diagnosis that they are the causes of neuralgia in the other, and, as may be imagined from these circumstances, it is often extremely difficult to get the patient's consent for their removal. Roots are a fruitful source of neuralgia, and in consequence should without hesitation be removed.

Tic douloureux, when arising from chronic inflammation of the pulp, will succumb to the orthodox treatment for that disease, and similarly, when arising from the decomposition of a dead pulp in the pulp chamber, will be cured by its removal, and subsequently rendering the canal antiseptic.

I have only seen one case in which the disease was dependent upon an impacted tooth, and this has made a lasting impression on my memory from the horrible expression of agony exhibited in the face of the sufferer. It occurred in the case of a man who had been a martyr for fourteen years to the most excruciating pain of a paroxysmal nature, the paroxysms occurring in the later periods of his life every five minutes ; in fact, to such a state of despondency had he reached that he repeatedly proclaimed himself tired of such a terrible existence. He was apparently edentulous, his teeth having been sacrificed with the hope of obtaining at least an amelioration of his symptoms, but to no avail ;

various operations had been tried, the last one being the removal of part of the floor of the antrum, but without the slightest relief. An examination of his mouth was made under the influence of ether; this led to the discovery of an eminence over one canine fossa, which gave rise to the suspicion of an impacted tooth, and such it proved to be, for on puncturing the alveolus over one canine fossa a tooth was discovered lying transversely over the situation of its socket; the alveolus was next removed, and the tooth, a slightly carious permanent canine, was with some difficulty extracted, and was followed by a cessation of the paroxysms; but it was not a permanent cure, for after an interval of six months they returned with increased severity.

Among the remaining dental diseases causing neuralgia are alveolar and dental periostitis, periostitis in any of the channels through which the nerves pass, swelling of the nerves, thus subjecting them to pressure from the unyielding bony canals through which traverse some antral diseases, osteophytes acting either in causing periosteal irritation or in diverting the nerves from their natural channels, secondary and osteo-dentines, &c., but I have said enough to prove the close relationship existing between neuralgia and diseases of the teeth. One more cause, in connection with the teeth, which I think has been received with some amount of scepticism, deserves attention; that is, the theory of neuralgia attending or following the extraction of a tooth. This operation is supposed by some not only to aggravate, but to be actually an exciting cause. How far this can be I will leave for the authorities to decide; one reason, however, appears rather weak, viz. that owing to some unusual violence a stretching of the nerve-fibres is produced, but I fail to see, unless we are believers in the homœopathic principle "*similia similibus curantur*," how this can produce it when, as we know, it is also a most efficient cure; besides this there are many instances in which we have necessarily to apply a tremendous force in extraction, yet these are rarely, if ever, followed by neuralgia.

Tic douloureux has been found to originate in pregnancy or

uterine disease, and may be cited as instances of reflex neuralgia.

Unfortunately we occasionally meet with cases in which every apparent cause has been removed. How, then, can we explain the etiology? For the correct understanding of this it is necessary to study briefly the physiology of the nervous system. Nerves are those channels which convey impulses to and from the centre, and a stimulus applied centrally will be felt peripherally, but only in the terminal endings of the nerves engaged.

A normal stimulus applied to a normal sentient surface will be followed by a normal sensation, whilst an abnormal stimulus applied to the same sentient surface will be followed by an abnormal sensation, and this abnormal sensation will generally be felt as pain. Compare the effects produced on the retina by the rays of light proceeding from an ordinary flame and the strong light of a midsummer sun; on the one hand, a normal response will be elicited as light; on the other, a distinct sensation of pain will be felt; and, following this law, a normal stimulus applied to the fifth will produce a normal sensation, which, like most other similar normal sensations, will not be perceived; but now take an abnormal stimulus, a carious tooth for instance, and there will be felt the abnormal sensation of pain, and it has been proved by experiments that irritation of the sensitive branches of the fifth or its ganglia excites more pain in the living animal than the irritation of any other nerve by the same stimulus, and supposing the stimulus afforded by the carious tooth to have been present but a short time on its extraction, *i.e.* on the removal of the stimulus, there will be immediate relief, but supposing the carious tooth previous to its extraction to have afforded the abnormal stimulus for some length of time, then perhaps we may arrive at a possible explanation by returning to physiology for a moment.

We know, from physiological experiments, that a nervous impulse travels at the rate of thirty-three mètres per second, this being spoken of as the normal velocity of a nervous impulse, but thanks to those poor miserably misguided

creatures the anti-vivisectionists, our knowledge is limited ; we know not how this velocity is affected by disease, possibly it is augmented. I have often thought how much this resembled a locomotive steam-engine, in which a stimulus being provided by the steam the machine moves, and subsequently quickens, and if let alone an enormous velocity could be arrived at. So with our nervous impulse, a stimulus provided by a carious tooth travels at a given rate, which subsequently quickens so long as the stimulus remains, but remove the stimulus from the steam-engine, *i.e.* remove the steam, or, what amounts to the same thing, remove the carious tooth, the velocity will then gradually die out, but in the case of the steam-engine the velocity is small as compared with the nervous impulse, and *pari passu* the latter will take the longer time to run down. Does not this, then, offer us an explanation of these chronic cases, that they are due to the simple running down of the greatly augmented velocity of the nervous impulses afforded by a stimulus which has been previously removed, the pain felt being due to the extra work being thrown upon an already hyperæsthetic nerve? And that the latter condition does exist is seen by the nerve or the disease presenting all the characteristics of hyperæsthesia, viz. :

1. Uniformity and persistence of the symptoms ;
2. Periodicity or the alternation of paroxysms ;
3. Freedom of early life from the disease ; and
4. Absence of danger to life.

May I be bold enough to suggest in support of this theory the fact that pressure applied to the affected nerve or nerves will often allay the pain, probably by arresting the passage of these nervous impulses.

Another way to account for chronic neuralgia, and perhaps a far more likely one, is to be found in the theory that the stimulus is applied centrally, and that the disease is in consequence due to some cerebral lesion, a rather vague phrase. That this is sometimes the case is supported by the necropsy of a case mentioned by Romberg, of which the following is an abstract of the notes :—The cranial bones, especially the parietals, were much thickened, the dura

mater, pia mater, and arachnoid were also very hypertrophied, the cerebral convolutions were atrophied, the ventricles were distended with fluid, in some of the cavities being serous, in others watery; there were, in addition to these other minor defects, the arteries in the cranium were abnormal, the internal carotid and vertebral of the right side being diminished in calibre, whilst the internal carotid of the left side was so much enlarged as to almost warrant the description of an aneurism occurring on it; the fifth nerves were atrophied, the left one presenting in its interior a peculiar dark red spot; the Gasserian ganglia were much paler than usual. Moreover, a case occurring in the out-patient department of St. George's Hospital I think lends some support. It was a case of a man who had originally followed the profession of an auctioneer, but owing to the severity of the disease with which he was afflicted had been compelled to relinquish his occupation. Thirty years ago whilst standing in a cart assorting some goods the horse suddenly moved, throwing him backwards, a bundle of garden rakes, lying on the pavement below, running into the back part of his neck, and from that time he has been subject to epileptic fits. For the last four years he has been troubled with neuralgia of Trousseau's epileptiform character, and in addition to these he is afflicted with the loss of the sense of hearing.

Pain is a constant indication of neuralgia, but though constant in its presence it varies greatly in intensity and character. One patient will complain of only a mere feeling of uneasiness, whilst another will state it to be unbearable; it may be continuous or paroxysmal, *i.e.* a man in apparently robust health will suddenly and without the slightest warning be attacked by the most acute pain; the paroxysms will disappear only to be followed after a brief interval by another. In some cases there will be a constant feeling of uneasiness, which at times will gather itself up, so to speak, into a paroxysm, lasting from a few seconds to a few minutes. A peculiar arrangement of the paroxysms is seen in the so-called intermittent neuralgia, in which the patient will be free from pain for weeks or even months at a stretch, and at

the expiration of that time will, without warning, have a paroxysm; this will pass off, but will be succeeded quickly by another; this one in its turn will pass off only to be speedily followed by another; and so after a brief time, in which the patient has experienced alternating periods of rest and pain, he will at length find himself, as he thinks, once more in sound health, but after an interval perhaps of some months the whole scene will be repeated.

There may be a symptom premonitory to the paroxysm, but this I think is rare. Some have described it as similar to the aura epileptica, others to the contraction of the uterus previous to parturition.

During the paroxysm the physiognomy will be often distorted, but of course this will vary with the moral courage of the individual as well as with the intensity of the pain.

The seat of pain varies with that portion of the fifth nerve affected, and this corresponds so accurately that it is possible to map out those situations on the face presided over by the respective branches of the trifacial nerve. These are spoken of as "Foci," and were first described by Valleix.

There will be a general tenderness around the seat of pain, accompanied frequently by a redness and tenseness of the surface, and this is often so shiny that Romberg has described its appearance as if it were coated with oil.

There seems to be no spot in particular from which the pain starts, at all events if this be so it is rare. In two cases which I had the opportunity of examining, the patients pointed out a highly sensitive, vascular, shining eminence on the upper maxilla as the starting-point of the pain.

Muscular twitchings will be found to accompany the severer cases, and in general will only exist in those of the face, though cases have been recorded in which they were found to occur in those of the body and limbs, and, to such an extent have these muscular twitchings been carried that the patient has been obliged to remain in that position in which he was previous to the attack. Other inconstant symptoms are the presence of tenderness over the spinous processes of the upper vertebræ and the alteration of the complexion.

Subsequent to the attack there will sometimes be found to occur a profuse perspiration, and an increased secretion takes place also in the lachrymal, parotid, and other salivary glands, so that tears will overflow on the cheek and an extensive salivation invade the mouth.

The hair on the affected side is in still rarer cases grey, contrasting strikingly with the colour on the opposite side. I have sometimes noticed that the tongue is loaded with fur on the affected side; beyond this and the possibly increased salivary secretion, I am not aware of anything in the oral cavity that would denote the presence of neuralgia.

With regard to the pathology of the disease, I may state that very little is known, the histological changes in the nerves being but slight. The neurilemma may be found thickened and congested, and the interstitial nerve-fibres acquire a finely-granular cloudiness, which may or may not be present in all. The neurilemma in chronic cases is pigmented, and the white substance of Schwann disintegrated, the granular matter from its protrusion forming peculiar varicosities. The granules vary in size, some being only visible by the aid of the highest powers of the microscope. The axis-cylinder is similarly disorganised, and sometimes attains a high degree of refrangibility. The granules are in all probability of a calcareous nature.

The prognosis of neuralgia is favorable in acute cases, and highly unfavorable in chronic, the latter sometimes terminating in melancholia, insanity, according to Halford, apoplexy and suicide.

As to treatment, every diseased tooth should be carefully treated, or if advanced too far removed. All roots should unhesitatingly be extracted, and it must not be overlooked that these are often concealed by the gum, the only sign of their presence being a small sinus. Impacted teeth, as I have already said, are not uncommon causes of neuralgia, and the slightest eminence or sinus which would give rise to any suspicion of such should be thoroughly probed, if necessary, under the influence of an anæsthetic. Many specifics have been advocated, but all have signally failed to obtain a permanent relief. Of these a gradually increasing dose of

Quin. Sulph. is most efficacious, but it seems to lose its effect after its administration for some time. Amm. Chlor., Pot. Iod., and Brom. afford relief in many cases. Tinc. Valerian has met with some success, and no doubt has a beneficial influence when the disease can be traced to a hysterical origin. There has been a rage lately upon Tr. Gelsem., but I do not think there has been much good attending its administration. Bell recommends Ferr. Carb., but I have had no experience of it. Tonga, I believe, has a very beneficial influence, but I think we ought to try other remedies before using quack nostrums.

As local applications mustard and belladonna plasters have been tried, but they afford only a temporary relief. The camphor liniments, both simple and compound, have been attended with no better result.

In the event of any of these failing, more serious steps must then be taken. Severing or removing in part the affected nerve has often succeeded. Nerve-stretching has lately come into vogue, and its practice is in most cases attended with marvellous success. Some surgeons, I believe mostly our transatlantic brethren, have not only suggested, but have actually performed, the operation of excising Meckel's ganglion.

If none of these succeed, and in the event of our being unable to trace the disease to a reflex origin, we must conclude that it is due to some obscure cerebral mischief, and that we must let the ravages of this fearful disease remain unchecked.

Gentlemen, in conclusion, let me tend you my appreciation of your very patient audience to what I am conscious is a most interesting subject, but one which has been but feebly handled.

DENTAL STUDENTS' SOCIETY.—Ordinary Meeting on May 8th prox. at the Dental Hospital of London. Chair taken at 7 p.m.

British Journal of Dental Science.

LONDON, APRIL 1, 1882.

LOWER DENTAL EDUCATION.

IN our last issue we remarked on a higher Dental diploma embodying necessarily an increased standard of professional attainment and honour, which we most earnestly trust yet to see carried into effect. But our sympathy with the more ambitious of our professional brethren must not be allowed to interfere with our duty as practical men, of looking the real state of things, as they now exist, steadily and fearlessly in the face, gauging what there is to be dealt with, and if possible arriving at a conclusion most calculated to raise the material at hand to its highest possible state of perfection. Now that the gates are closed by which our ranks were formerly so freely and indiscriminately enlarged, there is and will be an ever decreasing body of unqualified practitioners amongst us. It may not be pleasant to contemplate, but it is nevertheless a fact, that of the 5345 names on the Register, 4623 are at present without any diploma whatever, a terribly heavy proportion it is true, but of these it may be fairly assumed a large number will never really practice Dentistry, as a separate profession, at all. Being principally chemists and their assistants, whose operations are scarcely likely to exceed occasional extractions, although it must be confessed that as very many of them will pass their lives in out of the way small country places, could they have a fair insight into the art and mystery of conservative Dentistry, it would be of the utmost benefit to the poor of their neighbourhoods. We must not be misunderstood as advocating this loose kind of special education, but cannot dissociate from our minds the fact that for ages past the

country chemist has, per force, been likewise the country Dentist, and whether for good or ill, the only available one within reach of the poor, and is we fear for a long time to come still likely to be. Therefore the more he can, by any means, be prepared for his inevitable work, the better for his *clientel*. The activity of the Royal College of Surgeons in Ireland may be expected still more to diminish the number of those remaining. It is not altogether encouraging to note that during the past year only *eleven* gentlemen obtained the L.D.S. Eng. by curriculum, that but *six* availed themselves of the privileges offered by the Royal College of Edinburgh, and *fifteen* of those of the Faculty of Physicians of Glasgow, whilst 101 obtained the L.D.S.I. Is it altogether certain that the Irish standard is too low? or may it not possibly be that the Scotch standard has been a little too high for men who are already in practice and unable to neglect their daily duties for the requisite study to pass their examinations? Be this as it may, when all those with sufficient energy have availed themselves of the privileges of the various colleges, there will still be a very large number having the legal right to practise Dentistry and style themselves *Dentists* whose educational fitness is very far behind the requirements of the present age.

Dr. Walker aptly expressed the matter at the Odontochirurgical Society's Dinner (a report of which will be found at another page) when he said, "He had no fear for the students. They had knowledge crammed into them, and must make good and honest practitioners. He sympathised with the men of six-and-thirty. They would be starved. Look at such giants as were before him—men taught by the best ability of England, Scotland, and America."

That those with whom he sympathised and many younger men, who ought to be but are not students, can ultimately compete with these rising young "giants" is of course utterly impossible, but that they will passively "starve" is equally unlikely. That a great number will eagerly accept any means that may be brought within their reach to acquit themselves as honest practitioners, we have no hesitation in affirming. If, however, their more favoured brethren

(by registration) hold out no helping hand or encouragement to them, who can really wonder if instead of meekly accepting the starving alternative they join the ranks of those whom they see around them feasting and apparently prospering by "unprofessional practices" and latent consciences? That there will be some of the latter—by choice—is certain, until human nature changes. But the number of those—driven by necessity to such practices—will materially depend upon the facilities offered to them to prepare themselves for an honorable course of practice. It is obviously so important to all immediately concerned—the public, the profession, and the individuals themselves—that as many as possible of those who have the legal right—be it remembered—to remain amongst us, should be fitted to take their places in an honorable, if subordinate position. That this matter cannot be allowed to remain long unattended to is certain, but as it is mainly to the public and representative bodies that we should look for future reform and the upholding of the status and dignity of the profession in these matters, we earnestly commend the subject to their notice, in the hope that they will see the necessity of practically and quickly dealing with a question that cannot be shelved without increasing the very evils the profession so deeply deplore.

MESSRS. WEBSTER & LARKING, proprietors of 'Webster's Royal Red Book,' having sent out a circular to many Dentists to the effect that it has "become necessary to omit certain businesses usually excluded from a Court Guide" on account of the great expense of producing the book, offer to retain the names of any one "willing to pay for the privilege of entry, which really is neither more nor less than a valuable advertisement," at the rate of one guinea per annum, to include the two issues of their work. The amount to be sent by March 30th. On our setting before them the inconvenience it might occasion many professional men (who would not thus advertise), they immediately authorised us to

state that the exclusion will not apply to the names of any gentlemen holding the Licentiate in Dental Surgery or other diploma. But as some of their circulars will have been received by such gentlemen, it must rest with themselves to *immediately* communicate the nature of their qualifications to Messrs. Webster & Larking, 60, Piccadilly, W. We have little doubt these gentlemen will support the publishers by becoming subscribers to their very valuable Court Guide.

THE case of hæmorrhage described by Mr. Cullingford in our last issue has produced so many letters of inquiry and descriptions of cases (of which some will appear in our next issue), mostly from provincial sources, and couched in terms which plainly show how very little the inquirers understand the subject, and the very real alarm such cases naturally cause them when they come "so unexpectedly" upon them; that as this is the only really dangerous complication that arises in a Dental practice, without previous indication—the only cases in which life and death are involved—for we do not consider anæsthesia a Dental or Dentist's operation—we intend in our next issue to give some most interesting matter from undoubted authority. In practice for many years past we have never found the use of tinct. hamamelis fail to arrest hæmorrhage, the *modus operandi* being the simple one of little cones of tightly rolled lint soaked with the tincture and firmly inserted in each alveolar socket—just sponged clean—with a blunt plugger, and further layers of soaked lint to a little above the gum's surface, our favourite "compress" being either the thumb or finger, which has seldom to be held in position more than ten to twenty minutes. Whether we have been exceptionally fortunate in our cases, some of which have been both powerful and copious in their discharge, and others, previously to our seeing them, treated with caustics, &c., until the mouth has been in a sad state, or whether the tinct. hamamelis is to be credited as our salvator, we are not able to state, but can say that since using it (some twelve years) we have never had a failure, and but twice or thrice

a recurrence of the hæmorrhage, and those from premature removal of the plug, one great advantage of its use being that the surrounding tissues are left uninjured. The only deviation to this treatment we have made was on one occasion to try the effect of a cone of burnt alum, as suggested in one of our contemporaries, cut roughly the shape of the fang (of lower bicuspid) extracted, but larger, and thrust into the socket firmly with the finger and held there. The result was perfectly satisfactory, requiring no further attention whatever, as it came away without aid, one of the advantages claimed for it over other remedies.

WE most heartily congratulate the Dental Students' Society of London on their choice of President. A gentleman who can address the Society in such manly, open, vigorous, yet independent language, is certain to carry the whole body of students along with him, imparting to them the same enthusiasm and energy that he has always thrown into his own work. We congratulate himself also on the happy expressions with which he opened and closed his able address, and the easy grace with which he overthrew the conventional trammels that so often render an otherwise masterly speech commonplace. It argues most favorably for the results of his term of office.

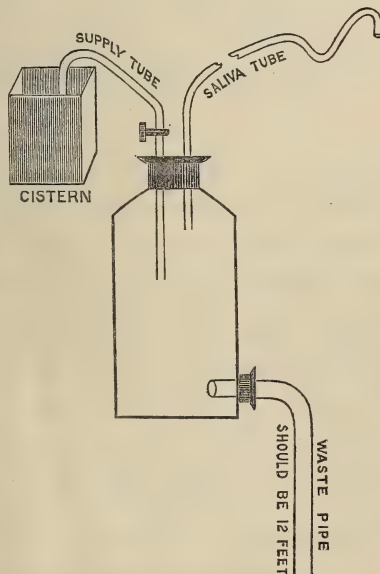
WE regret to have to announce the decease of Dr. Mason Stillman Dean, of Chicago, which occurred suddenly but peacefully on January 28th, 1882, at the age of fifty-seven. Without exception the whole Dental press of America offer tribute to the many virtues of their late genial and leading member; not one having even the slightest unkind thought with which to reproach his memory. Want of space prevents us extracting from the American papers, but we shall do so in our next.

Manipulative Miscellany.

A NEW SALIVA EJECTOR.

MESSRS. SMALE BROS. have a new saliva ejector, invented by Mr. Morton Smale, M.R.C.S., L.D.S. Eng., and recently exhibited by him at the Odontological Society of Great Britain. It is a most ingenious and effective contrivance, and is best perhaps described in his own words.

"I have it fitted to my operating room. Its advantages are its simplicity, it always being ready for use, occupying little space, and doing its work thoroughly; after some months' trial, I am perfectly satisfied with it in every way. The suction would probably be sufficient to carry away blood, and would be very useful in operations in the mouth. I have not yet been able to try this, but hope to do so when next I have a long case of extraction.



"The things necessary are a cistern above the operating room, a bottle, and some tubing of two different calibres.

The water coming from the cistern is regulated by a tap in the operating room ; for, when once working, very little water is necessary to keep it going. Directly the water rises above the level of the waste-pipe, it runs over into it, taking the air with it. No air can enter save through the saliva pipe (both corks being hermetically sealed), and consequently the suction in that tube is very great ; and if the bottle be put under the floor or under a chair, gravitation, in addition to suction, helps the process. The waste-pipe must be larger than the supply-pipe, and should be about twelve feet long. It is best to carry that tube out through the wall or window-sash, and to let it enter the water-pipe on the outside of the house. In my own case, this tube is put through the floor of the operating room into the kitchen, and through the kitchen window, and into the water-pipe. Messrs. Smale Bros., of Malborough Street, have one fitted up, and in working order ; or I shall be glad to show my own to anybody wishing to see it. I find it useful not only when stopping, but also taking impressions, or when cooling impressions with water, to run off the water from the mouth. For the idea and practical carrying it out I am indebted to my friend Mr. Fairles."

GUM GUILLOTINE FORCEPS.

MESSRS. C. ASH & SONS have manufactured a cleverly conceived instrument, the design of Mr. Woodhouse, with which the superincumbent gum over an erupting wisdom tooth can be removed by an instantaneous operation. It resembles a straight, thin, long-bladed pair of forceps, the one blade of which terminates in a thin, flat, shovel-shaped end, somewhat approaching in size the masticating surface of a wisdom tooth ; the opposing blade forms an irregular shaped ring, with a sharp edge, into which the flat blade accurately fits on closing the forceps. In using it an incision has to be made through the gum with a lancet along the anterior margin of the wisdom tooth ; the thin, flat blade of the guillotine forceps can then be inserted and passed over the whole surface of the tooth. With one pinch of

the handles the whole surface of the tooth will be exposed, and the piece of gum brought away in the instrument with as much dexterity as a railway porter clips a ticket, and, indeed, much after the same fashion.

NEW SHAPED TEETH.

THE DENTAL MANUFACTURING COMPANY have made a new shaped upper set of mineral flat and vulcanite teeth, calculated to fill a want long felt and oftentimes sadly trying. The enamel portion is of exceedingly natural shape, not unduly long, but varying, and its fangs long, and whilst sufficiently broad to prevent the rubber showing unduly between any two teeth, not ungainly so. They are likely to prove a great advantage in those cases where a few natural teeth remain, having their roots considerably denuded of gum and visible at almost every lifting of the lip, especially in the act of smiling. In these cases the ordinary long enamelled artificial teeth look most unsightly, whilst gum teeth or blocks or short enamelled teeth and gum rubbers look still worse, but these new teeth as nearly resemble the natural as it is possible for an artificial substitute to do.

W. S. BURROWS' WATER-POWER DENTAL ENGINE.

By means of a wheel ten inches in diameter and two inches in width, divided by sixteen blades and enclosed in a box large enough to allow a free passage of the water, an ordinary water supply will give sufficient power to drive a Dental engine. Where a constant supply is unobtainable, the water must come from a cistern not less than forty feet above the outlet, through a half-inch pipe terminating in an eighth of an inch jet, the tap being inserted just outside the wheel box. The water must play on to the flanges of the wheel at an angle of 45° , with a waste-pipe not less than two inches in diameter to enable the water to escape freely. Upon the spindle of the wheel protruding through the case a three-inch grooved wheel is fixed. It is only necessary to

connect this grooved wheel with the head-piece of the Dental engine by means of the ordinary band ; the standard and treadle of the engine may be done away with, as the head-piece may be attached to any Dental cabinet on a bracket, on the right or left hand of the patient. The left side arrangement giving more room to the operator and less annoyance to the patient. By it a more equal speed is gained, the attention of the operator is not diverted by using the treadle, while the burrs can be worked at almost any angle without the use of angle attachments. The water-wheel may be placed outside the house and a small rod attached to the tap, by which the water and wheel are controlled. Mr. Burrows will be happy to show the apparatus in operation to any of his professional brethren who may call at his residence, Somerset House, 12, New Road, E.

NEW OPERATING STOOL.

MR. RUTTERFORD has a new operating stool by Messrs. Codman and Shurtleff (Boston, U.S.), designed by Dr. Lyons, N.Y., substantially made, the new feature of which is that the top is fixed to the stand like an ordinary music stool, so that if an operator feels himself seated too low or too high he has only to raise the weight of his body and spin the top with a touch of his finger, when it will noiselessly be elevated or depressed to meet his convenience. For the rest it has the usual foot or heel lever, which enables the stem to be sloped to any desired angle.

W. AND J. JAMIESON'S NEW PINK DENTAL RUBBER.

WE have tested Messrs. W. and J. Jamieson's new pink Dental rubber, and in our hands it has given every satisfaction that a pink rubber can be expected to give. We consider it, like others, only suitable for a "facing," but it is a good colour, fairly tough, takes a good polish, and may be welcomed as another from which to make our choice. It remains much stronger if hardened at a low temperature, but then will not receive quite so good a surface.

Literary Notices and Selections.

THE PAST, PRESENT, AND FUTURE OF MECHANICAL DENTISTRY.*

By L. P. HASKELL.

WHEN your committee requested me to prepare a paper for this meeting, and the subject was called for, I said it might be "The Past, Present and Future of Mechanical Dentistry." So I will offer for your consideration, in a few words, some thoughts intended to awaken inquiry and provoke discussion upon this subject.

While there has been, during the last thirty years, great advances made in operative Dentistry, in its material, instruments and methods, it is true that during the same period there has been little or no progress made in mechanical Dentistry, so that practically the past and present of this branch of Dental science during this epoch are synonymous terms.

The cause of this condition of things has been mainly owing to the introduction of vulcanised rubber, by means of which a horde of quacks have foisted themselves upon the community, and cheap John "88 set" shops have been made possible. To such an extent has a demand been created for these cheap sets, it has discouraged the profession generally from recommending and urging upon their patients the use of a better, healthier, and more artistic mode of inserting teeth, requiring more expensive materials, and greater mechanical skill and artistic taste, but, of course, producing a piece of work of greater intrinsic value.

A little more than thirty years ago the use of plaster of Paris for impressions began to come into general use. There has been nothing better for reliable impressions, in *all* cases, introduced since.

* Read at the Illinois State Dental Society.

Thirty years ago a partner of mine, in Boston, Dr. D. H. Goodno, after much experimenting for a suitable metal for dental dies, using zinc, tin, type metal, fusible metal, brass and iron, at last tried "Babbitt metal," then but little known, and it remains to-day the *only* metal that has all the requirements of a dental die, viz. : non-shrinkage, hardness, toughness, smoothness, and melting at a low temperature, so that plates swaged upon these dies fit the mouth as they do the plaster model ; seldom is a second die required. And yet, our Dental colleges, with one exception, I think, and the great mass of the profession, still plod along in the use of zinc, with all its annoyances.*

Thirty years ago the profession were just abandoning the use of spiral springs for retaining plates in the mouth, and beginning to use atmospheric pressure for that purpose ; the plate was swaged to fit the plaster model, sometimes raising it slightly over the hard palate. To-day no better method exists.

Thirty years ago metal plates were used exclusively, and to-day they are the only suitable material, in all respects, for artificial dentures.

Thirty years ago "gum sections" were carved for each case, and mounted on gold plates, and were used very extensively throughout the Eastern States. But to-day the *moulded* sections have taken their place, and the result is a stereotyped, stiff and unnatural-looking system of artificial teeth.

Thirty years ago Dr. John Allen brought to the notice of the profession his "Continuous Gum Work," and it remains

* For the information of those desiring to use Babbitt metal the following suggestions are offered. Much of this metal that is for sale is unreliable. The better plan is to make it as follows:—Copper, 1 lb.; antimony, 2 lb.; tin, 8 lb. Melt in a crucible—in a forge or other intense heat—first the copper, next the antimony, then remove from the fire, and add the tin, and turn off at once into small ingots; remelt so as to thoroughly mix. After moulding and casting the Babbitt metal die, when it is cool wash it over with whiting. For the *counter* die use lead with about one eighth tin added, stirring till it begins to thicken, and pour. With these precautions there is no danger of the dies uniting, or of ever making a failure. Sand moistened with sweet oil will remain in condition for use many months, and is far preferable to that moistened with water.

to-day unchallenged as the only perfect method of constructing artificial dentures, and I must confess I see little room for improvement.

Thirty years ago it required at least a fair degree of mechanical skill to make and insert a set of artificial teeth. To-day the merest tyro can buy a set of "gum sections," a piece of rubber, take an impression, and make a so-called set of teeth. But it is sickening to witness the result, as one moves along the street, enters the public assembly, or the social circle. "Artificial teeth" written everywhere. This is the present.

What is to be the future? It is to be just what an enlightened, progressive profession shall choose to make it.

To make it what it ought to be, it will be necessary to create a public sentiment that shall demand something besides rubber or celluloid as the best, or even a good, material for plates. Let your patients know that these vegetable bases are, to a greater or less extent, injurious to the mouth and often to the stomach; that thousands of mouths are ruined by their use, in consequence of the undue absorption of the alveolar processes, always induced, to a greater or less extent, by the non-heat-conducting qualities of these materials; and also the more serious effects often produced by the poisonous qualities of the colouring material of red vulcanite.

Then the Dental Colleges ought to impress these facts upon their students.

More time should be devoted in these institutions to instruction in the practical details of the laboratory, even at the sacrifice of some of the dry details of theories about matters of little or no importance to the student; more instruction in *metal* work, and less in vegetable bases; simplifying processes and abandoning obsolete methods and ideas.

More attention should be paid to the artistic, or the esthetic, requirements of mechanical dentistry; then we should the oftener witness teeth selected and arranged as nature would have them, the contour of the mouth restored, and harmony of the features re-established.

It would be better for the interests of the profession if there could be a division of practice, so that it would be an object for Dental students, so disposed and having a taste for the mechanical department, to prepare themselves for the exclusive practice of this branch of the science.

I would not entirely dispense with the vegetable bases, for the reason that many are unable to afford anything better, but would advise their use only for that reason. And, when used, advise the use of plain teeth, as by that means more artistic results can be obtained.

Dr. Swain and Dr. Antes warmly endorsed Dr. Haskell's paper, and Dr. Antes said he thought the mechanical and operative departments ought to be separated.

Dr. Haskell not being a member of the Society, a vote of thanks was tendered him for his paper.

DEATH FROM THE SHOCK OF EXTRACTING A TOOTH.

W. ROGER WILLIAMS, Esq., F.R.C.S., Surgical Registrar to the Middlesex Hospital, in writing to the 'Lancet,' says: "When in charge of a friend's practice at Bristol some time ago, I received one day a very urgent call to proceed at once to a neighbouring Dentist's. On arriving there I found a stout woman, aged fifty, lying on the consulting-room floor, insensible; the face pale and of a faint purplish tint, the pupils equal and of about normal size, the breathing feeble and quiet, the pulse and cardiac movements imperceptible. The woman, an old patient of the Dentist, came that morning, apparently in her usual health, to have a decayed bicuspid tooth extracted. Being well aware that she had a weak heart, he refused this time, as he had done on several previous occasions, to give her any anæsthetic. In the presence of the patient's friends the tooth was easily drawn without it; but a few minutes afterwards she 'went off in a faint.' Failing to revive her, he sent at once for the nearest surgeon. In the course of about five minutes I arrived, and

at once examined the throat for a foreign body, but failed to detect anything, and was assured that her artificial teeth had been removed before the operation commenced, the complete set being now produced. Every available means was tried to restore her, but in vain. A little later her own doctor arrived, under whose care she had been for several years. He was well known to me, and I can place implicit reliance on his statement, which was to the effect that she had suffered for several years from palpitation and shortness of breath, without having had any murmur or other sign of organic heart disease. No post-mortem examination could be obtained. It was evidently a case of death from syncope, resulting from the shock of extracting a tooth. Had an anæsthetic unfortunately been administered, the death would certainly have been attributed to it. No doubt a considerable number of persons are living in a similar condition—balancing between life and death—to whom the slightest shock may prove fatal, although it is often impossible to detect in them any disease either during life or after death. Many such persons inevitably die, in spite of every precaution, when anæstheticised, no matter what agent may be employed, or when submitted to a surgical operation without any. The distinct recognition of this class of cases by the public, as well as by the profession, is a matter of the greatest importance; otherwise medical men may be most unjustly blamed for unfortunate eventualities quite beyond their control.”

TO MAKE PLASTER MODELS WITHOUT AIR BUBBLES.

PLACE in the bowl a sufficient quantity of water for the size of the model to be made, and sift into it the plaster. Do not stir it with a spatula, but keep on sifting in the plaster until it is thick enough to convey into the impressions. In this way a model entirely free from bubbles may be made.—*Dental Office and Laboratory.*

Reports of Societies.

STUDENTS' SOCIETY OF THE DENTAL HOSPITAL OF LONDON.

ORDINARY MEETING, FEBRUARY 13TH, 1882.

ARTHUR S. UNDERWOOD, Esq., M.R.C.S., L.D.S., President,
in the Chair.

THE minutes of the previous meeting were read and confirmed.

THE PRESIDENT then delivered his inaugural address, which we have transferred to another page.

Casual communications were brought forward by Messrs. F. CORNELIUS and W. HARRISON.

CASE OF DENTIGEROUS CYST.

MR. W. HERN, L.D.S., read the following notes of the case :

E. K—, æt. 14, presented himself at the Dental Hospital in January complaining of a large swelling on the left side of the inferior maxilla.

Previous history.—Temporary teeth were normal in number and position. The swelling complained of was first noticed about twelve months ago, since which time it has gradually increased up to the present; there has been no pain or tenderness of the part to attract patient's attention, and the only thing patient complained of was slight inconvenience in mastication combined with the deformity produced by the swelling.

Present condition.—There is a hard swelling which is smooth and circumscribed, situated on the right side of the body of the inferior maxilla, and extending from the right canine tooth backwards to the second permanent molar; this quite fills up the sulcus between the cheek and alveolus.

On palpation the surface of the swelling is smooth, and about the size of a pigeon's egg. There is no swelling or other indication of the tumour on the inner side of the alveolar ridge. On firm pressure the surface of the tumour can be indented with the finger, but on moving the finger the indented part regains its position with a distinct "crackle."

The right permanent canine, first bicuspid, first and second molars are *in situ*, but occupying the space between the first bicuspid tooth and first permanent molar are two

temporary teeth, the first and second temporary molars, the former of which has been displaced upwards and inwards towards the tongue by the eruption of the first bicuspid. An exploratory puncture was made through the cyst wall at the thinnest part, when a small quantity of glairy, yellowish, viscid, sparkling fluid exuded. On microscopical examination of this fluid crystals of cholesterine were found in great numbers.

The temporary molars were extracted by which the cyst was opened, and a large quantity of the glairy fluid was evacuated. On passing a probe deeply down into the cyst behind the first bicuspid, the second bicuspid tooth could be plainly felt, lying obliquely along the floor of the cyst cavity; it was thought advisable to remove this, and gas was suggested for the operation, but patient obstinately refused having anything more done, and followed up his refusal by a very hasty retreat from the hospital.

CASE OF LONG-STANDING NEURALGIA OF THE FIFTH NERVE.

Mr. W. HERN, L.D.S., also read the notes of this case as follows:

J. C—, æt. 26, a spare and debilitated man, presented himself at the hospital in February last, he appeared greatly depressed in spirits and complained of severe neuralgic pain which he had suffered with intermissions for about six years past. The pain complained of varies from a sharp shooting and darting kind to a dull ache.

Pain comes on in paroxysms which are commonly repeated several times daily, each lasting about a minute, during the paroxysm the pain is most intense and excruciating in character, shooting along the region of the right side of the body of the lower maxilla to the mental foramen, also very severe in and about the external auditory meatus; as the paroxysm ends, the pain decreases in severity, and gradually subsides with the exception of a dull ache located in the first right upper molar tooth. To use the patients own words, "the pain works its way around the jaw and gradually fades away into a dull ache in a top double tooth." Patient states that during the paroxysm there appears red lines in the skin over the lower jaw corresponding to the area of the pain, and that during the paroxysms he has often to hold his hands against his face as tightly as possible. For some considerable time past he has been afraid almost to eat anything, and indeed has been quite unable to do so on the right side for fear of setting up a paroxysm, the movements of the lips and tongue, and even a cold blast of air, setting up agonising darts of pain along the lower maxilla.

Condition of the mouth.—The mouth is in a very unclean and neglected state, the first right upper molar is dead, its crown has disappeared with the exception of a small piece of the buccal wall still projecting through the gum.

There are no very bad teeth in the lower jaw. There was no abscess connected with the upper first molar, nor was there any acute periostitis, yet the percussion of it gave rise to some very severe darts of pain along the jaw.

Gas was administered, and the upper molar extracted, the roots were greatly exostosed, and the apex of the palatine was sharpened out into a needle point by absorption.

The patient expressed relief at once after the extraction, nor has he up to the present time (one week) had any return of the paroxysms.

The PRESIDENT then called on Mr. H. L. ALBERT for his paper on "Facial Neuralgia" which we have reprinted in another column.

A discussion followed, in which the President, Messrs. D. Hepburn, L.D.S., C. Robbins, L.D.S., W. Hern, L.D.S., Marcus Davis, L.D.S., A. H. Tester, H. Baldwin, A. King, and W. Harrison, took part.

A vote of thanks was accorded to Mr. Albert for his paper.

Dental News.

ANNUAL DINNER OF THE LICENTIATES IN DENTAL SURGERY AND MEMBERS OF THE ODONTO-CHIRURGICAL SOCIETY.

THIS Anniversary Dinner was held at the Balmoral Hotel, Edinburgh, on Monday, March 13th, ANDREW WILSON, Esq., L.D.S.Edin., occupied the Chair, and W. BOWMAN MACLEOD, Esq., L.D.S.Edin., was Croupier. There were present—Dr. Peddie, Vice-President of the College of Physicians of Edinburgh, Dr. Littlejohn, Dr. Hunter Mackenzie, Dr. Croom, and Principal Williams, F.R.S.E.; Dr. Walker, London; Mr. Warwick Hele, Carlisle; Dr. W. Williamson and Mr. P. Crombie, Aberdeen; Messrs. Rees Price and Austin Biggs, Glasgow; Messrs. Walter Campbell and Syme, Dundee; Dr. Smith, Dr. Reid, and Messrs. McGregor, Finlayson, Matthew, J. S. Amooore, G. S.

Durward, E. A. Cormack, J. Mackintosh, Edinburgh; J. Moore Lipscombe, Kilmarnock; N. MacQueen, Hamilton; J. U. Crichton, Perth; D. A. Wormald, Bury. After dinner the usual loyal and patriotic toasts were proposed by the Chairman, and cordially drank by the company.

Dr. PEDDIE then proposed "The Licentiates in Dental Surgery." In doing so he said—The toast with which you have done me the honour to entrust me, is one which I have much satisfaction in proposing, and I am sure it will here be most cordially received. It is, "The Licentiates in Dental Surgery," a body who, from one or other of the British Colleges of Surgeons, have obtained diplomas of fitness to practise their speciality, being found well-educated men, and possessing a certain amount of medical and surgical knowledge in addition to that of Dentistry. (Applause.) And the toast implies not merely our best wishes for their individual prosperity, but also an expression of the high estimation in which we hold those arrangements of recent years, by which the Science and Art of Dentistry is elevated, public well-being consequently promoted, and a better status obtainable by the Dentist through qualified and legalised registration. (Applause.) When I entered the medical profession as an apprentice of the late Mr. Syme, fifty-one years since—(applause)—Dentistry in Edinburgh did not rest on a sound basis. No doubt there were then two or three much respected practitioners; but Dental work was mostly in the hands of illiterate men, whose practice was empirical; and a large proportion of extractions of teeth was performed in the back shops of druggists, or in private surgeries, or the waiting-rooms of the hospital and dispensary, by apprentices or youthful students. There was then, also, very little regard paid to the causes of affections of the teeth, and their frequent connection with organic disease elsewhere, or functional derangements of the system; but even the mechanical part of the art was somewhat clumsy work, and the fittings and fixtures often more injurious than beneficial. Besides, teeth supplied were chiefly natural ones, and, I believe, largely obtained from coffins rifled by undertakers, or tombs desecrated by gravediggers or resurrectionists;—(applause)—so that the wearers of such most probably have had many uncomfortable thoughts as to the mouths in which their masticators had previously resided! (Laughter.) Then, a stopping for the salvation of useful teeth was rare in comparison with extraction, and the latter was performed with that hideous weapon consisting of a bolt and claw—called the key—frequently after a fierce struggle, commencing in a chair, but terminating on the floor—(laughter)—in

which brute force prevailed, with the too common result of a tooth almost sound, or a wrong one, being torn out with a splinter from the jaws on its back! There were no anæsthetics in those days to mitigate the horrors of extractions, and seldom were means employed to prevent the necessity of extraction, or was due consideration given to the consequences which might result from that step. From those days, in the course of years, a gradual improvement in all departments of Dental practice took place, and also in the position of the self-educated practitioner; but with increased demand for Dental aid, there was also a greater amount of charlatanry without a more general and adequate advance in the study of Dentistry as a science of which physiology, pathology, and other branches of medical knowledge should form a part. But, thanks to the London College of Surgeons, the way was led in 1860 to a general recognition of the importance of the Dental profession and the institution of a better order of things; and ultimately, and chiefly through the able and indefatigable efforts of our genial friend Dr. John Smith—(applause)—who published on this subject so far back as in 1858—perhaps earlier—the Dental Act of 1878 was passed, followed by the action of the Royal College of Surgeons of Edinburgh and the Faculty of Physicians and Surgeons of Glasgow, whose excellent arrangements for preliminary and professional instruction and examination in view of conferring a license are worthy of all praise. (Applause.) Instead, however, of these measures receiving commendation from all quarters, the greatest abuse was heaped on the Colleges by some of the medical journals, from which better things might have been expected; for the Colleges were stigmatised as degrading themselves by such condescensions and liberality; and disgracing themselves by the sale of diplomas to those who chose to buy them! I need not tell you that these and such like hard things said at the first, and echoed down even to the present time in certain journals, were and are insensate ravings and gross fabrications. (Applause.) You know that the central principles of the Act of 1878 are—first, the prospective provision of a race of competent Dental surgeons; and second, that to the General Medical Council—the highest ruling medical authority in the kingdom—is confided the supervision of a curriculum for the education and elevation of the Dental surgeon. That august body, therefore, is responsible for the proper administration of the Act; and this ought to be a sufficient guarantee for the professional competence and position of those on whom the license is conferred. Then, in so far as the Edinburgh College of Surgeons is concerned,

all here know—and some of you may have experienced—(hear, hear)—how high the standard is of the preliminary and professional education required by it; and how searching the examinations are of candidates for license; and I doubt not you will agree with me in denouncing the assertions alluded to as entirely slanderous, being advanced without the slightest semblance to the truth. Already the license has done much to improve Dentistry, and to raise the position of Dentists; and in a few years the change will, we doubt not, be much more apparent, and that the wisdom and justice of the legislation of 1878, and the action of the colleges for the public welfare will be generally acknowledged. I shall not occupy your time longer, but ask you to drink to the Licentiates in Dental Surgery, coupled with the name of Dr. Reid. (Applause.)

Dr. REID in replying, said—In rising to return thanks in the name of the Licentiates in Dental Surgery, for the toast which has been so kindly given by Dr. Peddie, and so graciously responded to by you, I would, with your permission, Mr. President, premise by taking a short retrospective glance at the profession, in its position and its progress during the last forty years or so, seeing that the subject may not be altogether uninteresting to the younger members now assembled. Previous to 1841, the profession had neither status in the eyes of the public, nor yet cohesion in itself. In that year, however, Mr. G. Waite, of London, issued a pamphlet entitled ‘An Appeal to the Parliament, the Medical Profession, and the Public, on the present state of Dental Surgery.’ That was not responded to. In 1842, Mr. Robinson, a distinguished member of the profession in London, made a movement to raise a Dental Society. It came to nothing. In the year following, Sir James Graham, having laid a Medical Bill before Parliament, Messrs. Cartwright, Tomes, Parkinson and others, made advances to the College of Surgeons to ascertain if provision for Dental practitioners could be engrafted on it. They received no encouragement. This rebuff by the College was followed by a long period of inaction, viz. till 1855, when Mr. Rymer, of Croydon, addressed a letter to the ‘Lancet,’ advocating the formation of a College of Dentists. This was followed by him calling a meeting of the profession for the 22nd September, 1856. It was held at the London Tavern, when resolutions were carried—1st. To organise a Society. 2nd. To establish an authorised system of education; and 3rd, to form a committee to carry out the resolutions. This met with no support from the section of exclusives who, in 1843, had made overtures to the College of Surgeons, but who, in

the following month, September, 1856, renewed their application to that august body. Shortly thereafter, the Odontological Society was formed, but without any intimation or invitation to the profession at large—some eighteen individuals only being concerned in its formation. On the 16th December following the College of Dentists was constituted. A meeting having been held in the Freemasons' Tavern, at which some two hundred of the profession were present (many of whom were of high standing), a statement was issued to the effect that a Charter of Incorporation, it was hoped, would be obtained, and meantime, a staff of lecturers were appointed and commenced work on the 19th of February, 1857. About this time two bills were being brought before Parliament—Mr. Headlam's and Lord Elcho's—it being provided in each "That no person can be registered under them unless he be a member of some medical or surgical college or corporation." This point having been brought under the notice of the College of Dentists by a circular from Mr. Alfred Hill, a meeting was held on the 4th of June, 1857, when a resolution was passed to petition Parliament that Dentists should be exempted from the operation of the Act. A promise was given by both M.P.'s that a clause should be inserted to that effect. The gratitude of the profession at large is due to the two who carried this point, viz. Mr. Hepburn and Mr. Underwood, both of London. At a general meeting in July, 1858, a protest against a resolution of the College of Dentists to the effect that examination should not be imperative, signed by sixty-eight members, was handed to the president by Mr. Underwood, who then left the room, accompanied by the greater part of those present. So large a body having seceded, the College was left, as a matter of course, in a very crippled condition, and here, craving pardon for digressing, it may be mentioned that the two bodies, the Odontological Society and the College of Dentists, although travelling in parallel lines towards the attainment of the same good end, were, nevertheless, antagonistic in their views, and much mutual misconception of each other's intentions existed. Of this I had opportunities of judging, from my intimacy with the leading men of both institutions, and therefore I took it upon me to try and bring about a better understanding, by arranging an interview between the two motor powers, as it were, Tomes of the Odontological Society, and Underwood, of the College of Dentists. In this I happily succeeded, and these gentlemen afterwards became the delegates of either body in seeking the best mode of obtaining a diploma—that *sine qua non* to professional status. But to return. The College, owing to the secession of so

many of its supporters, having been left in such a crippled state, overtures were made for an amalgamation of the two bodies, the College abandoned its special views in favour of a common cause, and happily the strife, which had already existed too long, was brought to a close by their union on the 4th of May, 1863. Thus ended a very eventful period in the annals of the profession. Meantime the Medical Bill had passed, the 13th, 14th, and 20th of March of that year (1860) having seen no less than forty-three gentlemen (most of whom were distinguished members of the profession) submit to the ordeal of examination and receive the Dental diploma. Subsequent events need not be gone over here, they being known to all present, in the passing and in the working of the Bill of 1878. Moreover, I have already trespassed too long, I fear, on your time and patience. Yet I must ask you to bear with me for a few moments, that I may bring under your notice a matter of vital importance, in the education of the candidates for the Edinburgh Dental diploma, as also for the infusion of a humane element into the practice of our hospital. Without entering on the statistics of treatment during the limited period it has been in existence, suffice it to say that it is highly desirable the resources of Dental practice should be brought into full operation, so far as possible, in lessening the number of extractions, and bringing the percentage of stoppings and other curative treatment up to the average reported by the sister institutions throughout the country, while, at the same time, the classes seeking relief from suffering are thus being educated up to belief in the efficacy of a mode of practice they are at present profoundly ignorant of, and in which they have no faith. I trust I will be pardoned in noticing this matter, but I do so in two points of view—firstly, that our school may hold its place among others for ability in imparting instruction; and secondly, that humane feeling may guide those administering relief to give pathological treatment, where admissible, a fair trial with patients suffering from what our poet Burns has characterised as “The hell o’ a’ diseases.” I beg to return my best thanks for the very complimentary manner in which my health has been proposed on this occasion. (Applause.)

Dr. SMITH next proposed “The Odontological and Sister Societies.” This toast, he said, was one that required very little to be said in order that it might commend itself to their cordial reception. (Applause.) After what they had heard from Dr. Reid, he was sure he need not say much in regard to the Odontological Society. He thought it was in 1857 that its first meeting took place in Mr. Saunders’s,

George Street, Hanover Square, and since that time what that Society had done was too well known to all present to require mention. Its grand idea was also too well known to require any panegyric or eulogistic remarks on his part to ensure for the toast a hearty reception. (Applause.) He had been asked to propose the toast before its order on the list as the best in order to allow the members to leave in time for their train; but he was sure they would drink heartier to "The Odontological and Sister Societies," coupled with the name of Dr. Walker. (Applause.)

Dr. WALKER, in replying, said that the Odontological Society was a scientific body, somewhat identical with the Odonto-Chirurgical Society. It owed very much to the early Scotch members of the Society, and he was pleased to hear Dr. Reid speak of having taken so large an interest in its early days. He was a mere lad at the time to which Dr. Reid had referred, and had looked at the association through different spectacles, because he knew the men as his teachers. He knew they possessed the best intentions, although they did not, perhaps, see how they could steer through the same channels. He knew Mr. Tomes—he was his teacher in Middlesex Hospital—and Mr. Underwood, and Mr. Hepburn ever since he had a footing in London. He believed there were no more honorable men; though their work in early life was undertaken at a disadvantage, those present must congratulate themselves that they had the Odontological and the Odonto-Chirurgical Societies doing such grand and good work. (Applause.) They must not look back so much, but must rather look forward, and consider how their Societies could do more good work in the future than in the past; he thought they could do better work. He could only speak, perhaps, from a personal point of view. He was not a clever man. He could not learn from books only, but he could learn from practical teaching; and if this Society would adopt what they in London had adopted at the Congress—teaching by demonstration—they would largely increase their membership. He had no fear for the students. They had knowledge crammed into their heads, and must make good and honest practitioners. He sympathised with men of six-and-thirty. They would be starved. Look at such giants as were before him—men who had been taught by the best ability of England, Scotland, and America; and how would practitioners stand if they did not take them by the hand and show by cliniques that their Odonto-Chirurgical Society knew what conservative Dentistry was and ought to be, and must be in future? He must ask them to take practical demonstration under their wing, to admit free all

respectable practitioners to see the very best men work, how to work, and to teach them how they could work, if they would only come and listen and see for themselves. (Applause.) He concluded by thanking the meeting most heartily for the kind reception which they had given to the toast. (Applause.)

Dr. LITTLEJOHN (Edinburgh) then proposed "The Odonto-Chirurgical Society." In doing so he congratulated the members on their efforts to raise their position. They had their difficulties, and in that respect the College of Surgeons to which he belonged resembled them, for they were at one time trammelled with an inferior class of men, and their great difficulty was to shake themselves free from that class, and assert their position as scientific men. They had the barbers associated with them—(laughter)—and until they shook off these otherwise respectable members of society—(laughter)—the surgeons could not assert their position as scientific men. In like manner Dentists had for hundreds of years been associated with surgeons, and the blacksmith in his smithy, and he could assure them that their struggle to attain a scientific position had been earnestly watched by the sister colleges. These colleges wished the Dentists God speed, and he was sure that nothing but the most important business had prevented the Presidents of both being present at that meeting. (Applause.) They found that no sooner did the College of Surgeons emancipate themselves from their connection with the barbers than they at once set themselves, as the Dentists were doing, to unite for the promotion of their common science, and he believed this Society was bound together for the purpose of promoting the best interests of their profession. They had sister societies in London and in Dublin, and without a society in which the members could unite for meeting together and reading papers, where would their members be? They might have colleges; but they must be brought together as brethren for the exchange of thought and common sympathy. (Applause.) This Society was fulfilling its functions, and if he had been present at the meeting that day, as he wished he had been, he would have heard a paper read by his honored friend on his left (Dr. Smith), which would have done honour to any society in London, Scotland, or Dublin. (Applause.) Surgeons found in the Dentist's science an explanation of diseases many of which were connected with general health. Without them, therefore, surgeons would be without an important adjunct, and the time would come when surgeons and Dentists would unite together as common brethren. He coupled with the

toast the name of Dr. Smith, on whom he passed a high eulogium, who, he remarked, might, but for his modesty, have been President of the College of Surgeons, and most certainly would be the next president thereof. (Applause.)

Dr. SMITH acknowledged the toast. So far as the Odonto-Chirurgical Society was concerned, he said, Edinburgh had for long rejoiced in many learned and ancient and honorable associations of the kind, as the offspring of that high reputation on which she had ever stood, and on which she still stood, while she had good reason to boast of the older associations, he was certain that she had equal cause for congratulation in some of the younger ones, and among them the youngest of all, perhaps—the Odonto-Chirurgical Society of Edinburgh—(applause)—the anniversary of which they were meeting that evening to celebrate. It was satisfactory to look over the long list of names which that Society, young as it was, already comprised; it was satisfactory to observe the number of workers; and it was satisfactory to perceive the amount of work which had been already done on behalf of that Society. And while the members had done work for the Society, he reminded them that the Society had not been behindhand in returning the compliment by affording the benefits and advantages of the leading Dental society attached to the foremost medical school in Scotland—if he would not be out of place in calling it the foremost medical school in the world. (Applause.) While the members derived these advantages from it, those outside its walls must find it ever alive to the interests of the profession which it represented. The discussion which took place at an earlier stage of that day's proceedings, when his friend, Principal Williams, gave such an able address, showed the advantages and the importance of such a body in looking after legislation, and regulating and modifying all the legislative measures which were put forward with the view of elevating Dental Surgery to that high position which it already occupied. (Applause.) In whatever way they looked at the Society—either at its efforts to advance education and cultivation among the students, or at its administrative capacity towards its oldest members—it must be always regarded as a Society useful to the younger members of the profession. It had lately been very prosperous, and its prosperity had been put to good purpose. The various journals of the Dental literature of the day had been long open to students, and however much these journals might have conduced to assist in exciting a desire for knowledge on the part of Dental students—however much they might have assisted in affording that knowledge, or enabling students to draw conclusions from what was given them in

the journals, still, it was always thought that knowledge so derived was apt to become somewhat limited and superficial; and, with the view of averting this disadvantage, it was thought that a library, including some of the larger works, the more special monographs, the higher and more comprehensive works of the authorities in medical surgery of this and other countries, might conduce to the improvement of the students. In that way a valuable library had been collected by the Odonto-Chirurgical Society, and had been thrown open with certain restrictions to students of Dental Surgery in Edinburgh. Another mode of instruction equally instructive, and more attractive to some minds—an interesting museum—had been thrown open to students on the same conditions. In this way the students who came to Edinburgh, and who might be, at a youthful age, far from the domestic hearth, were thus enabled to devote what might otherwise be their lonely evenings to a course of study which would conduce to the feeling that not only was knowledge power, but that the acquisition of knowledge was a positive pleasure. (Applause.)

Mr. WALTER CAMPBELL, L.D.S., Dundee, next proposed "The Licensing Bodies," and in the course of his remarks said he was sure they could not adequately thank the four honorable, great, and learned societies for what they had done for Dentists. In the first place, if he could take it upon him to speak in the name of humanity, he would whisper into their ears how thankful all were to them for looking after the Dental arrangements of Her Majesty's lieges. They looked after, more or less, "all the ills that flesh is heir to," and as their friend, Dr. Peddie, had reminded them of that horrible ill that their national poet referred to so graphically, they had added it to their list, and would take care that humanity would be attended to by those properly qualified to do so. And if he might speak in the name of the Dentists, he would thank them for what they had done in taking them under their great wing. There might be differences of opinion with regard to the Dental licenses which the different bodies gave. Some thought that certain of the bodies were too severe in their examinations, and there were others who thought that one or two of them were, perhaps, too lax, and that they gave their degrees too cheaply; but they might all depend upon it they acted honorably and wisely and well. He was very much pleased, therefore, to hear their esteemed guest, Dr. Peddie, give the lie direct to those insinuations regarding the selling of diplomas by any institution such as either of their licensing bodies. (Hear,

hear.) The thing was so dreadful to contemplate that it was well to give it the lie direct. (Applause.)

Dr. LITTLEJOHN, whose name was coupled with the toast, replied, and assured the meeting that all the licensing bodies were actuated by a sincere desire to assist the Dental profession to rise in scientific position. For the College of Surgeons, he could say that it conducted the examinations in a careful spirit, and with an earnest desire that the candidates should be carefully tested. He had frequently seen young men, Dental students, put to a severe test in chemistry and stand it as well as any medical student could have done. He came into contact not only with the examiners of his own college, but with gentlemen of the Dental profession who acted as assessors, and some of whom he saw present, and he was sure that their intercourse had been most agreeable, and that they were not only thoroughly impartial, but conducted the examinations as if they had been brought up to that work. (Applause.)

Dr. WORMALD then proposed "The Edinburgh Dental Hospital and School." In speaking to this toast he said that in whatever difficulties they might stand, considering the circumstances by which they were surrounded, and considering the position in which legislation has left them, they must now hold up the future of their calling. This Society, having commenced and having now in useful working order one of the training schools which would influence the future of their profession, it gave him great pleasure to propose in that city a toast so suited and interesting to a gathering of Dentists; and he felt sure of this—that under the fostering influence of its worthy Dean, Mr. Macleod—(applause)—and the various officers connected with that institution, they would make such a sacrifice of time and ability on their part as to make that institution worthily fulfil its position as one of the training schools of that city. He could only hope that as time rolled on the same unity which characterised the Dental profession of that city would grow more and more throughout the other centres of the country, and thus be sure that the interest shown in regard to the hospital and training school would influence the students who would year by year be turned out from its doors. He hoped they would prove themselves worthy of the reputation of that university seat, worthy of the influence by which they were surrounded, and that they would do what they could to ease the trammels of suffering humanity, and be worthy of the members of a great and noble calling. (Applause.)

The CROUPIER, in responding, said he could assure Dr. Wormald that it had ever been the endeavour of those con-

nected with the Hospital and School to make it worthy of the reputation of the city in which it was placed. But, more than that, it had been their strongest endeavour to make it worthy of the profession to which they belonged. (Applause.) He could assure Dr. Wormald that the Edinburgh Dental Hospital and School had met with a measure of success which was quite beyond the anticipations of its projectors. (Applause.) The number of its pupils had increased year by year, and he was happy also to say that as these pupils increased in numbers the interest and zeal of the Dental officers connected with it had increased likewise. At the present moment they had on the roll of students a number far beyond their hopes; and not only were they great in number, but, what was better to know, they were a credit to it, and would certainly be a credit to any school in which they might possibly be. (Applause.) A good deal had been talked, more especially in connection with the hospital, about the number of teeth that were extracted in comparison with the number which were conserved. In looking over their books that morning it gave him very great pleasure indeed to be able to assure the gentlemen around that table that, so far as the Edinburgh School was concerned, that stain was rapidly being wiped out. It was a matter of regret to the staff that, when giving out the last report the proportion of extractions to stoppages was so small; but he was happy to say that at the beginning of this year the percentage of stoppages had increased by about 100 per cent., and that if this continued till the end of the year they would be able to present a report which would do good, and make glad the heart of the most conservative Dentist. (Applause.) With these few remarks he had only to thank Dr. Wormald for his kind wishes towards their schools, and to assure him that it would be the endeavour of the staff and their officers in all time coming to make that school worthy of the city, and worthy of the profession. (Applause.)

Mr. FINLAYSON, L.D.S., then proposed "The Visitors from a Distance," expressing a hope that they would carry tidings of their meetings to friends at a distance, and that on future occasions they would bring others to join the ranks of the Society. (Applause.)

Mr. REES PRICE, Glasgow, replied in suitable terms.

The CHAIRMAN next gave the toast of "Absent Friends," and referred to the absence of, amongst others, the President of the College of Surgeons, Dr. Heron Watson, Dr. Joseph Bell, Dr. Cormack, Dr. Hepburn, and Dr. Haldane, who were detained by indisposition or business.

Mr. LIPSCOMBE proposed "The Chairman," and Mr.

CROMBIE, Aberdeen, "The Croupier," and these gentlemen briefly replied.

The company then separated.

THE ODONTO-CHIRURGICAL SOCIETY.

The 'British Medical Journal' of the 18th inst. says the Odonto-Chirurgical Society of Edinburgh, at a meeting held on Monday in Edinburgh, adopted the following resolution: "That, although the Society are of opinion that the three years' mechanical training is, and always must be, the essential part of the training of the Dental Surgeon, they do not consider it necessary for the Dental Student to be compelled to pass his preliminary examination in arts prior to his entering upon his hospital and surgical duties."

APPOINTMENTS.

BIRD, THOS., M.R.C.S., has been appointed Administrator of Anæsthetics to the Dental Hospital of London, *vice* Alfred Coleman, F.R.C.S. Eng., L.D.S., resigned.

PARKINSON, —, M.R.C.S., L.D.S., has been appointed Assistant Dental Surgeon to the Dental Hospital of London, *vice* S. J. Hutchinson, M.R.C.S. Eng., L.D.S., appointed Dental Surgeon to the same hospital.

SUTCLIFFE, W. A. O., L.D.S.I., has been appointed Honorary Consulting Dental Surgeon to the Sunderland Provident Dispensary.

VACANCY.

NATIONAL DENTAL HOSPITAL, 149, Great Portland Street, W.—House-Surgeon. Salary £50 per annum. Applications by April 26th.

EDINBURGH DENTAL HOSPITAL & SCHOOL.—The Summer Session begins on May 1st, 1882. W. Bowman Macleod, Dean.

EASTERN COUNTIES DENTAL ASSOCIATION'S First General Meeting is fixed for April 26th. W. Stringfield, Lowestoft, Suffolk, Hon. Sec.

Correspondence.

[We do not hold ourselves responsible for the opinions expressed by our Correspondents.]

"SURGERY TALK."

To the Editor of the 'British Journal of Dental Science.'

SIR,—On opening my 'Dental Journal,' which came this morning, my attention was at once arrested by the title of Mr. Laws' paper on "Surgery Talk." I read it with the greatest interest and pleasure, and having thought a good deal on the subject, and for some years past endeavoured to avail myself of every opportunity to impart to my patients some little knowledge which might be of practical value, I fully endorse all that Mr. Laws has written, and am especially gratified by the excellent and noble spirit which pervades the whole paper.

I do believe so thoroughly in taking our patients into our confidence, and am persuaded from experience that this is the best, indeed the *only*, way of gaining theirs, and that mutual confidence is essential in order that our labours may be satisfactory and successful no doubt all will admit. We have no professional secrets to hide from our patients. An intelligent young lawyer, with whom I was having a little "surgery talk" a short time since, said, "Well, I suppose there is no 'hokey pokey' in it." No, sir, there is nothing of this kind in our business which calls for secrecy or reserve, or for dark and mysterious language. We may safely relegate all this to the establishment of Vernon Galbray and his fellows, and seeing that the age of superstitious belief in mysteries has passed away, and we have an intelligent public to deal with, we may and should let our patients know exactly what we are doing for them and why we do it. This does not detract from their respect for us, but greatly enhances it. I find most people greatly interested in what I tell them, and grateful for advice and instruction with regard to *their own* treatment of their teeth. To many patients advice of this kind seems quite novel, and though they have been under different practitioners the subject has never been mentioned to them. There is certainly a great neglect of duty on the part of many Dentists in this respect. So very frequently the particular operation is performed which the patient requested and nothing else attempted—no examination of the mouth made and no advice given.

My object is to add my testimony to that of Mr. Laws, that most of our patients are reasonable and intelligent people, and that it is best both for them and for ourselves that we should take them into our confidence and treat them to the best of our ability. For some time past I have been lending to my patients—especially those who are heads of families—that excellent little book by Dr. White, ‘The Mouth and the Teeth,’ which may be obtained at the Dental depôts, and which, while it conveys in simple language more instruction than the most earnest of us can convey by our “surgery talk,” it also materially benefits our practice by leading to increased care of the teeth on the part of those who read it. But the “surgery talk” itself will do a great deal, and it is surprising how easy and natural and interesting it becomes when constantly practised.

I trust that many of our brethren will “read, mark, learn, and inwardly digest” Mr. Laws’ excellent paper, and both the public and the profession will be benefited.

I am, &c.,

JOHN TRUDE FRIPP, L.D.S.R.C.S.I.

St. Mary’s Road, Willesden, N.W.;

March 17, 1882.

THE NEW DEPARTURE FILLINGS.

To the Editor of the ‘British Journal of Dental Science.’

SIR,—In reply to your correspondent, Mr. James Hardie, on the above subject in your last issue, allow me to state that Drs. Flagg, Chase, and Kingsly do not advocate only the use of amalgam but also of oxychloride of zinc, gutta percha, and even tin foil, in preference to gold for filling; but suppose they confine themselves to amalgam, I should hardly think your correspondent would recommend filling front teeth with it, even if they be fragile. We are quite well aware that a good amalgam is preferable to a bad gold filling for back teeth, but we think should never be used for front ones.

If Mr. Hardie were to compare the gold fillings say of Dr. Marshall H. Webb with the plastic fillings of a first-class man, like Dr. Foster Flagg, I think he would find that the first of these gentlemen would win the laurels of success, even in the most fragile of those that Dr. Webb would attempt with gold, such as I give in the enclosed extract from ‘Notes on Operative Dentistry’ by him.* I maintain

* Upper centrals with only thin labial walls of enamel standing and sufficient enamel to leave a margin below the gum on other sides.—ED.

that many of those that advocate plastic fillings do not know the best methods of manipulating the gold. I am, &c.,

ALEXIS DE NEGRI.

March 20, 1882.

THE MEDICAL DIRECTORY v. DENTISTS' REGISTER.

To the Editor of the 'British Journal of Dental Science.'

SIR,—Allow me, as a reader of your Journal and as one registered under the Medical Act, to point out to some of the letter writers to your paper the more than pitiable attempts they are making to bring, not only themselves, but the whole profession with which most unfortunately they are identified, into open and undisguised contempt. Nearly four years have elapsed since the passing of the Dental Act, during which time hundreds of men have been admitted to (I will not say examination, for the bare use of such a word suggests the antecedents of the men who passed it) and received diplomas, and still these boards, not yet content with the amount of goods they have on exhibition, and the amount of money they have made in this direction, are still in a position to perpetuate a practice which more than any other must of necessity tend to the entire lowering (*i.e.* if possible) of the whole profession, and to bringing into disrepute all diplomas, no matter how favorably obtained. Only a month ago another suggestion has been made by which, with some approach to dignity, the Irish College may still further scatter its much sought-after and now somewhat numerous diplomas, and now a very determined effort is being made to induce the Medical Directory to lend its powerful aid to giving an entirely fictitious value to diplomas which have been obtained without any attempt at compliance with the Act, which imposes so much hospital practice and a set curriculum of study. My name is in the Medical Directory as well as on the Register; to get it there, or rather before it was permitted to be placed there, I spent four years in practical study at a medical school and hospital; whilst from the advertising columns of your Journal I find all that is necessary for the obtaining of a Dental diploma is to place myself in communication with any of several persons by post, and this much-coveted prize can be obtained, in your last issue one man assuring all who like to apply to him that every man he sent up passed. I read with great interest, Mr. Editor, your remarks about the number of diplomas granted last year, and the very pertinent question you ask as to why these diplomas were not all registered. Allow me to suggest one or two reasons which very likely have escaped your notice; men are getting to be

ashamed of their possession, whilst others cannot afford to pay the necessary fee for doing this; if, therefore, the Medical Directory lends itself to the free exhibition of these names it will directly tend to rob the Medical Council of the fees to which by law they are entitled. But, sir, there is another feature to this question. By-and-bye men will begin to present themselves for qualification who have legitimately fulfilled the requirements of the Act, and at great cost gone through the complete curriculum. Are they to stand and be classed along with men who never spent one day inside a medical or Dental school, and who know nothing whatever of the structures with which they daily deal more than that which they have acquired by a system of postal cramming. A short time ago, replying to an advertisement (from a fellow whom of previous knowledge I remembered to have been an ordinary mechanic), I received a letter signed and garnished with the letters L.D.S.R.C.S. (he forgot to put the I.), politely informing me of his ability to put me in the way of obtaining this favourite Dental license, whilst shortly afterwards I received from another man, who fain would stand at the top of his profession, and whose only claim to any such position is the possession of this same license, a beautifully-finished glazed card, having on it the cabalistic letters L.D.S.R.C.S., also omitting the I. If I write M.R.C.S. and omit the affix E. or Eng., it is not that I am afraid or ashamed of its use, but simply because I know it to be quite unnecessary, my college being the only one which grants a membership, but if I add the letters L.R.C.S., in honour I am bound to state the college or licensing board from which my qualification was obtained. But what is the position of scores of men throughout the country, who for lack of means or timidity hesitate about applying for these but too-easily obtained Dental licenses? Why, in the small town where I live I know of one man, head and shoulders better than any of his fellows, a man who, strange to say, has legitimately served his time to the trade, and as a mechanical Dentist can do every class of work with which he might be entrusted, and yet this man is overshadowed with men who possess these licenses, but who, as mechanics, are not fit to hold the candle to him, and I know, for each of them have done work which, as a surgeon, has afterwards passed through my hands. Now, let me through you, Mr. Editor, blow out a note of warning to those men who are ever trying to bolster up a rotten position. Only this very week I have read a circular pointing out to our profession the positive duty they owe themselves to add Surgical Dentistry to their other sources of income, the

said circular also containing advice to all young men whilst walking the hospital to qualify themselves by acquiring a knowledge of mechanical Dentistry for the future practice of this branch of surgery, which if they do—well, then, “good night” to simple Dentistry as bolstered up by all the adventitious notions so ardently promulgated by these recently-initiated licenses. I must confess myself considerably amused by the letter recently inserted in your Journal, finding fault with the action of medical men who venture to prescribe in cases of neuralgia, &c., and at the assumption that all such cases should first by them be remitted to the Dentist. Surely, this man was having his little “goak,” he could not be in earnest, so I will at present say nothing more about it, but conclude myself as being

Yours obediently,
M.R.C.S. Eng., &c.

REPORT OF CASES TREATED AT THE NEWCASTLE-ON-TYNE DENTAL HOSPITAL

FOR ITS FIRST YEAR, ENDING FEBRUARY 24TH, 1882.

Extractions	{ Children under 14 years	98
	{ Adults	340
	{ Under Anæsthetics, not stated.	
Irregularities of Teeth treated		28
Miscellaneous and Advice Cases		170
Total.....		636

ARTHUR BERNARD HARRISON, L.D.S.

REPORT OF CASES TREATED AT THE EXETER DENTAL HOSPITAL

FOR THE YEAR ENDING DECEMBER 31ST, 1881.*

Extractions	{ Children under 14 years	1059
	{ Adults	2276
	{ Under Nitrous Oxide and Ether.....	111
Stoppings		966
Miscellaneous		727
Total.....		5139

Number of Patients admitted 3624

HENRY B. MASON, L.D.S. Eng.,
Hon. Sec.

* Taken from the ‘Exeter and Plymouth Gazette and Daily Telegraph.’

To Correspondents.

1. Communications intended for insertion in the ensuing number must be forwarded to the Editor, at the Office, 11, New Burlington Street, London, W by the 8th and 23rd of the month, and must be duly authenticated by the name and address of the writer.
2. We cannot undertake to return communications unless the necessary postage stamps are forwarded.

ANSWERS TO CORRESPONDENTS.

- "Q."—The department you mention is to be discontinued, but anything or description of anything new and interesting will receive due attention if sent. Brevity with perspicuity is requisite.
- "M.R.C.S."—Some of your opinions are shared by many. Help to overcome the evils you point out by suitable articles and your labours may be well required.
- JAS. TAYLOR wants to know where "Heveenoid, the Rubber of the Future," can be obtained. If not obtainable in England write to "The Heveenoid Manufacturing Co., New York," for information.
- GEORGE BAYLIS.—Thanks for the papers. The case is interesting, but much too long for publication. If the judgment is modified or reversed we shall feel obliged by your making a short account of it and the opinions it has created.
- J. WILLIAMS, L.D.S.I.—We cannot reopen the subject.
- THOS. ROEDSON, jun.—We cannot. Write to Secretary.
- B. L. HARDING.—Will appear in next issue.

Communications have been received from Messrs. Morton Smale (London), R. C. Goddard, Hon. Sec. Odonto-Chirurgical Society, W. S. Burrows, Hon. Secs. Students' Society, J. T. Fripp, Alexis de Negri, Dean of Edinburgh Dental Hospital, W. A. O. Sutcliffe, J. Williams, W. & J. Jamieson, G. Balis, G. Carr, B. L. Harding, "F. P. P." (Glasgow), J. S. Amoores (Glasgow).

BOOKS AND PAPERS RECEIVED.

'Dental Office and Laboratory.' 'The Missouri Dental Journal.' 'The Dental Cosmos.' 'Ohio State Journal of Dental Science.' 'Transactions of Odontological Society.' 'The Journal of the British Dental Association.' 'The Glasgow Medical Journal.' 'The Australian Medical Journal.' 'Lancet.' 'British Medical Journal.' 'Medical Times and Gazette.' 'Annual Report of the Newcastle-on-Tyne Dental Hospital.' Announcement of the Dental Department of the University of California. 'The Chemist and Druggist.' 'The Pharmaceutical Journal and Transactions.' 'Correspondenz Blatt für Zahnärzte.' 'El Progreso Dental.' 'Die Zahntechnische Reform.' 'Le Progrès Dentaire.' 'The Cheshire County News.' 'The Cape Argus.' 'The Natal Mercantile Advertiser.' 'The Exeter and Plymouth Gazette Daily Telegraph.'

NOTICE.—We desire that it may be clearly understood that our pages are open to all for free expression of their views on matters connected with our profession. We only ask for terseness of expression and MODERATION IN TONE.

When otherwise unobjectionable, difference of political or other opinion will never be regarded by the Editor as a disqualification for the admission of any communication to the pages of the **BRITISH JOURNAL OF DENTAL SCIENCE.**

British Journal of Dental Science.

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VOL. XXV.

ALVEOLAR HÆMORRHAGE AND ITS TREATMENT.

By ALFRED COLEMAN, L.R.C.P., F.R.C.S., L.D.S., &c.

I SHOULD like to add to that already written in my manual (which I have no objection to your reprinting if you think it may be beneficial) that the employment of water—as hot as the hand can bear to be immersed in it—to rinse the mouth, as used by some practitioners in cases of both primary and secondary hæmorrhage, but chiefly for the former, and which has been found so beneficial in cases of post-partum hæmorrhage, may be used with success. The remedy is simple and should be known to all Dental practitioners.*

† “A not uncommon complication occurring after extraction is abnormal hæmorrhage: this may be primary or secondary. There is always more or less bleeding immediately after the removal of a tooth, greater and prolonged if there has been long-standing inflammation, the vessels under such conditions having less tendency to contract. Should it continue to any unusual extent, we may employ cold by iced water, exposure to the air, tannic acid, or even perchloride of iron, or plugging; but the last is seldom necessary with the primary hæmorrhage. The secondary hæmorrhage is much more difficult of control, and generally occurs under the

[* The theory of arresting hæmorrhage by the application of *hot* water is that it dilates the vessels, which, on cooling to the normal heat of the body, contract; whereas, when the hæmorrhage has been stayed by contracting the vessels with ice, &c., on their resuming the natural heat they are liable to become sufficiently dilated to admit recurrence of the bleeding.—Ed.]

† From ‘Manual of Dental Surgery and Pathology,’ by Alfred Coleman, L.R.C.P., F.R.C.S., L.D.S., &c.

following or similar circumstances. The patient who has undergone removal of a tooth in the day, and with no specially untoward circumstances, wakes up in the night with his mouth full of blood, and finds that a considerable quantity has been running from it during sleep. He probably feels somewhat faint from the loss, and, if he do not seek advice and assistance, it may go on until fatal syncope supervenes. Death from this cause, especially in remote country places, is not very rare, and even does occur at times in large towns. The cause of the secondary hæmorrhage is of a constitutional rather than a local character, and is stated to be more dependent upon a diseased condition of the muscular coats of the blood-vessels than upon a want, in the blood, of the property of forming a firm coagulum or clot. Both, no doubt, may produce this condition, the former probably in those who are ever liable to it, *i. e.* persons suffering from hæmophilia or the hæmorrhagic diathesis, the latter in those who may have only been subject to it at particular times. Where such tendency is known to exist, we must exert all resources before extracting a tooth; and, if compelled to do so, must plug the alveolus in the manner which we shall now describe, and which, we are happy to say, has never failed in our hands, although we have been called to cases where other means proved of no avail, and where the patients appeared fast sinking. A piece of matico leaf, which has been immersed in water for a few minutes, should be rolled up, the under surface of the leaf outwards, into as many little pellets, about the size of a pea, as the roots of the tooth removed: a narrow tent of lint, about one third of an inch wide, and about four or five inches in length, should be prepared, as also a pad of the same about the size of a chestnut. The mouth should be cleansed from blood, and the socket carefully cleared of coagula with cotton, and immediately after the removal of the cotton a pellet of matico introduced into each alveolus and pressed firmly down with a broad compressing plugger; upon the matico the tent of lint is with the same instrument to be firmly packed layer upon layer, until the alveolus is filled a little above the surface of the gum, and upon this is

placed the pad, which should extend above the crowns of the adjoining teeth, and becomes pressed upon when the mouth is closed. The mouth should be kept closed by a bandage passing round the head and under the chin.* The horizontal position, with the head and shoulders slightly raised, should be maintained, and the apartment kept cool, and hot and spirituous drinks avoided; but, should the patient appear sinking, some stimulant must be administered, and the patient kept warm, as a very little lowering of temperature, after great loss of blood, may suffice to extinguish the spark of life: the occurrence of convulsions will indicate for certain the latter treatment, if not, in addition to it, transfusion of blood. Strong beef jelly should also be given in small quantities, but at frequent intervals, the finger of a bystander being kept pressed upon the pad whilst the mouth of the patient is opened. Gallic acid, gr. v-x; Tinct. Ferri Perchlor. ℥ xv-xxx; or acetate of lead, gr. j-iv, may be administered. Care should be taken to allow the plug to remain until it is pressed out of the alveolus by plastic formation beneath it; but in very severe cases we must be prepared for a return of the hæmorrhage when this takes place. Should, however, our efforts at controlling the bleeding, by pressure or other means, prove unavailing, even after we have substituted a gutta-percha or vulcanite plate for the lint pad, and this has been attended with success, we must, as a last resource, be prepared to cut off the supply of blood from the part, although this would probably be worse than useless where the hæmorrhagic diathesis is well marked. In other cases it may prove successful. Should this step be imperative, we are disposed not to recommend the course which is generally adopted, viz. deligation of the common carotid artery, but rather to advise deligation of the external carotid, and for the reason that most disastrous consequences are very likely to result from shutting off one of the four principal supplies of blood to the brain. Anatomical considerations would also lead us to fear secondary hæmorrhage when a collateral circulation

* We have known several cases where the application of B. W. Richardson's styptic colloid has proved most successful.

has been established through the free inosculation of vessels at the base of the brain—Willis's circle—but experience points to the fact that this is not the case. The operation of tying the external carotid in the living subject is not as simple as the same operation on the common trunk,* but this is a minor consideration when compared with the greater danger to life from the latter. Before proceeding to this extreme resort, we should naturally try the effects of pressure on the vessels, and this might be kept up for a moderate time, but, owing to the nature of the structures pressed upon, could not be tolerated for any lengthened period. In the case of hæmorrhage from a tooth of the lower jaw, the inferior dental artery could be readily got at, and obliterated in its passage through the bone."

DENTITION IN THE HORSE AND OTHER ANIMALS.†

By PRINCIPAL WILLIAMS, Edinburgh.

AFTER some preliminary remarks, Principal Williams said he might state, in the first place, that a horse had forty teeth—twelve incisors, four canines, and twenty-four molars. In a specimen which he held in his hand the number of teeth was found to be forty-four (the typical number), and, remarkable to relate, they were the teeth of a mare, in which, generally, the canines were wanting, or very rudimentary. When they were there, they were in the lower jaw, and, as a rule, they were not to be found in the upper jaw. But, in this case, there were two well-developed teeth above—a most remarkable circumstance, the like of which he had never seen before. One of the molars was diseased

* If the case be one in which the hæmorrhagic diathesis exists, there may be less danger, on the whole, in tying the common carotid artery, as fewer vessels will be interfered with than in the operation of tying the external carotid.

† Read before the Annual Meeting of the Odonto-Chirurgical Society of Edinburgh.

and had to be removed. The mare lived for some time after that, and he watched the case very carefully.

A foal was born with two central incisors in each jaw, and a calf had eight incisors at birth, or a few days afterwards. A pig had four incisors at birth, or a few days after. He might state here a remarkable fact. In the horse the incisors were the central teeth; in the calf the central ones were cut first and the side ones (corner) afterwards. But in the pig the corner incisors were cut first. That was a very kind arrangement of Providence, for when a pig was sucking its mother they knew how it tugged and tore at her, and if the incisors were in the centre of the mouth they would injure the lacteal parts. That was, however, prevented by there being only one incisor at each corner.

When nine weeks old the horse had four incisors, and when nine months there was the appearance presented by the very nice specimen which he now showed to them. There were in it four incisors cut and two cutting. At twelve-months old the infundibulum, or "mark" of the central teeth, was commencing to be obliterated by the wearing down of the teeth. There were no changes in the incisors of the horse till he was two and a half years old, when the central ones were shed; at three and a half years the lateral ones; and at four and a half years the corner ones. At five years of age the horse was said to have a full mouth. He might state that no amount of care in the breeding of the horse, or in its feeding, made any great difference in the process of dentition. A Highland pony would have as full a mouth as a highly pampered horse. Perhaps, in some cases, where animals were very highly fed, the corner incisors might be cut a month or two sooner than if the horse was otherwise treated. But if they turned to the cow they found a remarkable thing. He had said that the calf had eight incisors. At the age of one year and nine months the central temporary incisors were shed, and the permanent ones cut. If we took an animal of the Highland, or any of the unimproved breeds, although we found that at two and a half years of age the central permanent incisors were cut, still such an animal did not have a full mouth of permanent

teeth till four and a half or five years of age. On the other hand, they found that improved breeds had at two years of age four permanent incisors. At two and a half they would have six, and at two years and nine months they would sometimes have a full mouth. They were as well furnished with teeth in every possible way at the age of two years and nine months as the unimproved animals were at five years of age. The science of agriculture, while it enabled the farmers to grow two blades of grass where only one grew before, almost enabled them to raise two animals instead of one. In the same time that one unimproved animal took to arrive at maturity they would have two improved ones in the same condition.

As regarded the molars of the horse, there were at birth, or shortly afterwards, three temporary molars in each jaw. At the age of one year the first permanent molar was cut, and it stood fourth in the row. When the horse was two years old the second permanent molar was erupted, and it stood fifth in the row. At three years the two anterior temporary molars were replaced by permanent ones. The sixth molar was cut, and at the same time the remaining temporary molar, which stood third in the row, was replaced by a permanent one. He had an explanation to make with reference to the fourth molar. It was the shortest molar in the mouth, and it was the tooth that was most frequently diseased. His experience was, that amongst the herbivora—and he might include the pig—caries of the teeth did not exist; that is, the kind that affected the human teeth. He thought that in these animals there was no caries but necrosis. This molar was a short tooth; but continued to grow almost as long as the animal lived. He then exhibited a specimen in which the obliteration of the nutrient foramen was nearly completed; the circulation thus cut off necrosis of the dentine resulted, and he believed that was the only actual disease there was in the herbivora that we could compare with caries. He exhibited a specimen which had become soft, and, as a result, splits had taken place in the tooth. In consequence of that the food had worked up into the cavities of the face, and, as a result, there were

great discharges from the nostrils. One of the symptoms of a diseased tooth was a fetid discharge from the nose, continuing often for a long period. If, by examination, portions of food could be found in the discharge from the nose, this would point conclusively to the fact that a cavity had been formed in the tooth which admitted of the entrance of the food into the facial sinuses.

The dog had forty-two teeth, and the arrangement was not quite so symmetrical. In the dog caries was found as true as it was found in the human being.

Then, as to camel's teeth, he had several specimens which he had received from India; but he had little to say with regard to them. It would be observed that in the upper jaw there were only two incisors, as they were termed by some writers on anatomy; but they appeared to him to be more like canines. There were only two canines and two incisors. It was a remarkable arrangement that in the ruminating animals the incisors were in the lower jaw only.

A beautiful arrangement existed with reference to the ox's teeth. They were fitted in quite an elastic way, and not fixed. When the chisel-like teeth were made use of in the act of grazing, there was an elastic cushion which prevented fracture of the teeth. He never saw a diseased tooth in the cow, and broken teeth very rarely. Notwithstanding the force with which a cow grazed in a field, and the liability of coming into contact with stones, it seldom happened that the teeth were broken, owing, no doubt, to the fact that they were on an elastic cushion. Returning to dentition, he might mention that young oxen—two or three years of age—sometimes began to lose flesh, and many of them were condemned all over the country as suffering from chronic disease, and very often destroyed. The majority of these cases were suffering from the crown of the temporary teeth remaining in the gum and preventing the animal from masticating its food. (Several specimens of these were shown.) These animals were supposed to be in a dying condition, and he had found in many cases these teeth sticking into the gums, and preventing the animal from

eating. There was a man in the north of England who followed the profession of an animal Dentist. He went about and examined the cattle, and gave them relief at once—by removing the portions of the teeth that were troubling them.

The Principal then exhibited a specimen showing the formation of a tumour, and several scores of teeth in a cavity. They would notice that the teeth were very imperfect. He had seen tumours of that kind with 500 imperfectly developed teeth. It would be very interesting to be able to explain how these were formed. He had seen two or three cases of the kind, and the late Professor Dick had a specimen containing an immense number of these imperfectly developed teeth. He had also seen teeth growing from the petrous portion of the temporal bone, and he had removed from one animal three of them consecutively one year after another. It was a most remarkable thing, and very difficult to account for. He had also seen teeth in testicles, and various parts of the body, enclosed in little tumours. These teeth were generally very hard. The teeth from the petrosa were excessively hard. They were most difficult to remove, requiring very great force before they could be detached from the surroundings, very often breaking, and breaking with a fracture like ivory. They seemed to be very hard dentine; and why they should be there was beyond his comprehension. He exhibited a specimen, and pointed out that the gum came very near the crown of the teeth. With regard to the removal of the molars, it might be observed that the proportion of teeth exposed was very short; and when they took into consideration the length of the fang, as shown in the specimen now exhibited, they would understand how extremely difficult the removal of a tooth became. He had, however, removed them without any difficulty whatever by trephining. He thought that it was by far the most humane way; for, however strong the forceps might be, there was very great danger of fracturing the jaw, owing to the great length of the fang. It was difficult to get anything to grasp the molar. They could not fix the mouth of the horse in the same way that they could fix the mouth

of a human being. Then, if they used chloroform, or any anæsthetic, there was great risk of the animal being suffocated by the hæmorrhage. He had trephined the lower jaw, and he considered it was the most expeditious and best way of dealing with such cases. He then exhibited a specimen showing disease of the facial bone (osteoporosis), and where the teeth were quite healthy. It was an animal five years of age. That was not an uncommon disease, and it had been increasing of late years. He had seen more of it since foreign horses had been brought into the country. In this disease the skeleton became excessively brittle. He had a specimen showing that twenty-four ribs of a horse had been fractured, some of them in three or four places. It was remarkable that, although the bones in the face were the first to suffer, the horse might continue to have the disease, and still the teeth did not suffer. He then exhibited two cases of teeth, each of which seemed as if it contained another within it. He had only seen those two cases in all his life. In his concluding remarks, Principal Williams said that he should have been glad if he had thrown any light on the disease of the teeth. If the information he had given as to the absence of caries in the herbivora—if the information he had given, that after a long experience he had not met with what he considered pure caries in those animals, would throw some light on the question of food, or something else which might be the cause of caries in the human being—he should be highly gratified. He begged to thank the Society for the attention with which they had listened to him.

The CHAIRMAN (J. Smith, M.D., F.R.C.S. Edin.) said he was sure that the Society was very much indebted to Principal Williams for the interesting remarks he had made on the teeth of animals. He had dealt in an able manner with the anatomy, physiology, pathology, and surgery of the subjects. An arrangement might be made to have a full discussion on the paper at a future time. Meanwhile he would be glad to hear remarks by any gentleman. He was sure they would all agree with him that the Society should render a hearty vote of thanks to Principal Williams.

Principal WILLIAMS said it was very gratifying to him to have had the honour of appearing before the Society, and that his imperfect observations had given such satisfaction.

The CHAIRMAN said he hoped that the subject brought before them by Principal Williams would not be allowed to pass without giving it careful consideration. There were many valuable points in it, not the least interesting being those that had reference to the difference in the period of dentition produced by the altered circumstances in the modes of life of different animals.

Mr. HELE, Carlisle, said he was anxious to have asked Principal WILLIAMS whether the alteration of the period of dentition affected the regularity or irregularity of the teeth—whether the rapid development was characterised by any malformation?

Principal WILLIAMS said that sometimes there was malformation, but generally, as the jaw expanded, the teeth got all right.

Mr. WILSON, Edinburgh, said they would remember that in the Factory Act rules there were long tables as to the state of the teeth of the children about twelve or thirteen years of age. It was shown then that, even in the teeth of the human subject, there was great irregularity; and where there was an irregularity of the development—where the teeth were erupted earlier than the average—the physical development of the individual was equally advanced. Apparently, they might conclude in the same way that, in the rapid development of the teeth of the cow, they might have the physical development in the same way. As to horses escaping toothache, he suspected that the plan, not of extraction, but of displacement, as practised by Principal Williams, was almost identical with the Dentist's use of the elevator.

Dr. WALKER, London, said that he had experience both in the agricultural districts in the West of England as well as in London. At first he found caries much more common among children in London than in the West of England; but latterly he had found as much caries amongst the children in the country as in the towns. He did not know whether

it might be due to the fact of the agricultural classes being now much better fed, and from the fact of their having meat regularly on their table. He found that they were not content unless they had meat every day. If the herbivora were free from caries, might it not be that the food had something to do with the condition of the teeth? It might also be due to nervous irritation, produced by an excited brain at an early age. In the West of England many of the children were sent to work early in order to earn money for their parents. It was a new line of thought to hear from Principal Williams that caries was not found in herbivora. He thought that he could count on his fingers the number of children he knew who had teeth free from caries at the age of six. As to the treatment of horses, there was a man in London at present doing a very extensive practice as a horse Surgeon Dentist in the treatment of laceration of the tongue. The external edges of the molars were so sharp in many cases as to cause laceration of the tongue. That was frequently due to the bit touching it; and this man was reaping a rich harvest by carrying a file in his pocket and rubbing the teeth.

Principal WILLIAMS said he found that veterinary surgeons often rubbed the teeth with files when the state of the teeth had nothing to do with the condition of the horse. He thought that the gentleman in London referred to was making a speciality of nothing at all. There were no doubt cases where it was necessary to file the teeth, but there were hundreds of cases where the teeth were filed where it was not necessary to do so.

Mr. FINLAYSON asked if the porous disease of the bone referred to by Principal Williams had been found in the Highlands or in the towns?

Principal WILLIAMS said he had found it in all kinds of animals—in Shetland horses, and in all breeds. It was very commonly found in horses in pits.

The CHAIRMAN again expressed to Principal Williams the thanks of the Society for his kindness in laying such an interesting communication before them.

SURGERY TALK.

By THOS. FLETCHER, F.C.S.

THE suggestions of Mr. Laws on this point, I think, do not go far enough. Dentists, as a rule, have a tendency to make secrets of their work and processes to patients, and this is undoubtedly a mistake. The instinctive feeling with most patients is, when there is any covering up or pretence of secrecy, that there is a large proportion of sham in the whole affair. This sort of thing injures both the reputation and the position of Dentists all round, and at all events with the educated classes places the art of Dentistry on a lower level than it fairly deserves. For eighteen years my workshops have been close to my operating-room, and not only were patients free to go in and see anything and everything, but the rule has always been that if patients had to wait they were asked if they cared to go into the workshops. The curious variety of work and the necessary manipulative skill are, as a rule, fully appreciated, and patients enjoy themselves, coming away with a fairer understanding of the difficulties a Dentist has to contend with. Ladies often are delighted at the opportunity, even after the caution that it is a tremendously dirty place, and that this system of making everything fully open to all is the correct one I have no doubt whatever. Any one who keeps secrets or pretends to keep them is usually looked on as a humbug, and the popular estimate is on the average not far from being correct on this point.

THE balance sheet of the Dental Hospital of Exeter shows a satisfactory financial condition, although, as its usefulness increases so rapidly, and its benefits are so increasingly appreciated, a still greater ratio of subscriptions will be required to enable it to continue its good work unfettered. Its income for the year was £160 7s. 5d. (including £6 18s. 4d. brought forward from the previous year), enabling it to attend to 3624 patients, performing 5129 operations, to place twenty guineas to the reserve fund, and retain £23 10s. 5d. for current expenses.

A MEANS OF ARRESTING OBSTINATE ALVEOLAR HÆMORRHAGE.

By B. L. HARDING, L.D.S. Eng.

I AM tempted by reading Mr. Cullingford's article in the issue of this Journal, March 15th, on "Hæmorrhagic Diathesis," to mention a means of arresting obstinate hæmorrhage after tooth extraction, which may possibly not be generally known and adopted. I can hardly hope to lay claim I am afraid to originality, as many practitioners doubtless employ ways and means known only to themselves to meet the various cases occurring in the exercise of their profession, and which are kept from general circulation from some such motives as "it being too much trouble to write to the journal," or "dislike to see their names in print," or "the fear that some one has used the means suggested for a long time past, and that thus they will be thought guilty of rushing into print." All these reasons have severally presented themselves to my mind, and have had more or less influence on me; but if every one had hesitated to communicate a remedy for an evil, however trifling, our profession would not hold the position it does at the present time. I may say, however, that I have never seen or read of it.

In the case which I am about to mention, the patient had a lower molar extracted; before the operation she mentioned, however, that she suffered from hæmorrhagic tendencies. The tooth was removed, and the lady went away; up to the time of her leaving there was nothing to induce me to think that any unusual bleeding would take place. After the lapse of about four hours a servant came to say that her mistress was losing a good deal of blood from the socket from which the tooth had been extracted. I went, and was shocked to see the patient looking very white and weak, evidently having lost a considerable quantity of blood, to which fact the saturated handkerchiefs and napkins bore ample testimony. I wiped out the cavities carefully, and

placed a piece of cotton wool saturated in Liq. Ferri Perchlor. in each, placing on these little pads of dry cotton wool pressed firmly home, and on these a pad of lint, after which I bound the lower jaw firmly to the upper, and left her, with full directions what to do. Calling an hour or an hour and a half later on, I found the family medical man there, who told me that the hæmorrhage still continued, as, indeed, I saw for myself. The usual and well-known remedies were tried, but without any permanent success. At last the following plan suggested itself to me, how I cannot say. I went home and procured a tray of the right size, and some Godiva, and proceeded as in a case where an impression of the mouth was required, except that when the composition was hard, instead of removing it, I let it remain (I had previously plugged the cavities) and did not remove it for two hours. When I did so, to my great satisfaction the hæmorrhage had entirely ceased and did not break out again. The remedy was not conducive to comfort or appearance, but it was effectual.

CORRECTION OF REPORT OF ODONTO-CHIRURGICAL DINNER.

To the Editor of the 'British Journal of Dental Science.'

SIR,—In your report of the Odontological Society's dinner of March 13th, there appears to me to be a mistake requiring correction.

Where my friend Dr. Peddie alludes to any service I have attempted rendering the cause of Dental education, he is reported as saying, that ultimately and chiefly through the efforts of Dr. Smith—who published so far back as 1858, perhaps earlier, or words to that effect—"the Dental Act of 1878 *passed*, followed by the action of the Royal College of Surgeons of Edinburgh," &c. What I understood him to say in this last sentence was "the Dental Act, passed in 1878, was followed by the action of the Royal College of Surgeons of Edinburgh," &c.

Another error giving me credit for more than my deservings, occurs where Dr. Littlejohn is made to say in reference to the papers read at the afternoon meeting, "the paper read by my honoured friend on the left, Dr. Smith." This ought to be "the paper read by my honoured friend on the left, Principal Williams."

I am, &c.,

J. SMITH.

REVIEW OF THE DENTAL ANATOMY OF THE MESOPLONDON LAYARDI.*

By H. J. GOULD.

MR. PRESIDENT AND GENTLEMEN,—In reviewing the subjects brought under the notice of the Society during the past year by the authors of papers read at these meetings, it has struck me that a very large majority of the papers have been devoted to matters appertaining to Dental Surgery to the exclusion of subjects relating to Dental anatomy.

For this reason I had at first intended to write an article on the Dental anatomy of the whole Cetacea as a class, but on second thoughts it appeared to me that to enter on such an extended subject would be to trespass too greatly on the patience and courtesy of my audience.

As, therefore, I have reason to believe that a great many of the gentlemen present may not be acquainted with the results of the latest researches in connection with the Dental anatomy of the *Mesoplodon Layardi*, I determined to confine myself to this one animal.

The geographical range of Layard's *Mesoplodon* is very extensive. From the Cape of Good Hope, where it was first discovered, at least three crania have been procured. Other specimens have been obtained, far to the eastward, from the Chatham Islands, New Zealand and Australia, whilst the discovery of the skeleton of a specimen at the Falkland Islands has extended its habitat considerably to the west. All the localities in which it has been obtained are in the southern hemisphere, either in the South Atlantic or South Pacific, and there is no knowledge of this Cetacean ever having been seen to the north of the equator.

Two specimens, both adults, have been recently collected at the Cape of Good Hope, the locality where the whale was first seen, and a third, a young animal, has been obtained at Port Sussex, on the west coast of East Falkland Island.

* Read before the Students' Society of the Dental Hospital of London.

It is with these three specimens that I would ask your considerate attention for a few moments.

The difference in size of the adult and young specimens may be estimated from the size of their crania, which in the young specimen is twenty-five inches long, in the adult forty inches and a half.

As the time allotted me is not sufficient to describe the skull, I shall at once proceed to describe the form and structure of the very remarkable teeth of the *Mesoplodon Layardi*, and as the study of the tooth in the younger animal has thrown great light, not only on the structure, but on the peculiarities of form of the adult teeth, I shall in the first instance describe it.

The teeth of the young *Mesoplodon Layardi* are embedded in their sockets, one in each half of the lower jaw. Each tooth consists of a small triangular denticle, which represents the crown of the tooth, and of a larger part, which for descriptive purposes may be termed the fang. The denticle projects outwards and slightly upwards from about the middle of the upper border of the fang. It is about seven tenths of an inch in its basal diameter, and four tenths of an inch from apex to base. The fang is homologous with the strap-shaped shaft in the adult tooth, but instead of being vertically elongated and strap-shaped its longer diameter of two inches is in the anterior-posterior direction, whilst its greatest vertical diameter to the base of the denticle is only eight tenths of an inch. Along its deeper border it possesses a cleft two tenths of an inch wide, which leads into the pulp cavity. On a vertical section being made through the middle of the entire tooth this cavity was seen to be prolonged almost as far as the apex of the denticle.

The free surface of the denticle is completely invested by a glistening white enamel, and on a thin vertical section being taken out of the middle of the tooth and polished for microscopic examination the cap of enamel was seen to be of almost uniform thickness over the entire denticle, at the base of which it was somewhat overlapped by an upgrowth of cement from the fang. When highly magnified the surface of section was seen to be marked by delicate bands, extending

almost perpendicularly to the surface of the denticle, which indicated the rods of which the enamel was composed. Subjacent to the enamel was a well-defined mass of dentine, which constituted the chief substance of the denticle. It was traversed by undulating branched tubes, which radiated outwards from the pulp cavity, and were arranged with as much regularity as one sees in the crown of a human tooth.

Where the branched terminations of the dentine tubes came into relation with the deep surface of the enamel, a layer of irregular, but somewhat stellate, spaces occupied the dentine matrix. These spaces corresponded in appearance with the so-called granular layer situated in human teeth, more especially in the fang between the dentine and cement, and may be termed interglobular spaces.

The dentine was prolonged downwards into the fang, and with a simple lens could be traced almost as far as the edge of the cleft at its root, but it formed so thin a lamina in the greater part of its extent, as to appear merely as a line in the unmagnified section. When highly magnified, the dentine in the fang immediately continuous with that in the denticle was seen to contain the tubes arranged in a regular manner, but as the dentine was followed farther into the fang, the tubes began to break up into irregular groups, then to be sparsely scattered through the matrix, and at last to disappear, so that in the lower part of the fang the dentine was represented by a translucent matrix, having indefinitely shaped granules irregularly scattered through it. The fang of the tooth is invested by a yellowish-brown substance, which is smooth on its surface in proximity to the denticle, but in the region of the cleft is pitted with shallow grooves and small foramina, so as to have a porous aspect. In the section this substance was seen to vary in thickness, its maximum being one tenth of an inch, and becoming thinner both towards the denticle and the cleft. To the naked eye it is divided into a superficial and a deep layer by a well-defined line. The superficial layer consisted of cement, in which the lacunæ and branching canaliculi were large and distinct. The deeper layer was more opaque, and required a very thin section to determine its structure. It consisted of a granu-

lated matrix traversed by numerous canals, which were for the most part arranged perpendicularly to the surface of the fang, so as to extend from the dentine to the cement. To some extent they branched, and adjacent canals communicated with each other.

The pulp cavity is lined in the greater part of its extent by a well-defined layer, having a maximum thickness of nearly one tenth of an inch. This lining can be seen with the naked eye to extend into the crown of the tooth, reaching on one wall of the cavity to within one tenth of an inch of its apex, on the other to about two tenths of an inch. It has a brown colour, and the surface next the pulp cavity is marked by numerous shallow grooves and small foramina. Examined microscopically, this lining had essentially the same structure as the deeper layer of the outer covering of the fang. The canals were, however, of greater calibre in the inner lining, and passed obliquely from the surface next the pulp cavity to that next the thin layer of dentine. The minute foramina on the free surface of this lining were the openings of these canals. Although, to the naked eye, the dentine which forms the apex of the pulp cavity does not appear to have any of this substance in contact with it, yet, when examined microscopically, the part next the cavity was observed to be discoloured brown, and with its proper dentine tubes often indistinct, whilst some tubes of a larger calibre were seen in it.

The cement, as capable of recognition by the presence of lacunæ and canaliculi, terminated about two tenths of an inch from the edge of the cleft-like opening of the pulp cavity, and previous to its termination it becomes very thin. The structure which forms the wall of the cleft is directly continuous with the deeper layer of the outer investment of the fang, and with the substance lining the pulp cavity. It had a similar microscopic appearance, but the part next the cavity had in addition to the obliquely divided canals, many canals divided transversely. There can be no doubt that in the living tooth these canals had contained blood-vessels. In size they approximated to the Haversian canals in bone.

The question now arises, What is the nature of this very

vascular substance which formed the lining of the pulp cavity and the deep layer of the external investment of the fang? If its development could have been traced, one would have had no difficulty in answering this question, as the several tissues of a tooth arise from definite structures. Thus the enamel proceeds from the enamel organ, the cement from the alveolo-dental periosteum, and the dentine, with its modifications termed vaso-dentine and osteo-dentine, from the pulp. The absence, however, of both dentine tubes and lacunæ and canaliculi in its matrix, and the presence of vascular canals, leave doubts, from a structural point of view, whether this substance ought to be regarded as a modified cement or a modified vaso-dentine. This difficulty would have been increased if the layer situated in the fang between the cement and dentine had been the only one present, as from its position it might have belonged either to the cement or to the dentine. But as a layer of similar structure also existed next the pulp cavity, there can be little doubt that it had arisen from the pulp, and notwithstanding the absence of dentine tubes, may be regarded as a modified vaso-dentine, to which substance also the deeper layer of the covering of the fang may be referred. This conclusion is supported also by what is known of the structure of the teeth of some fish in which the dentine consists of a substance destitute of dentine tubes, but possessing a finely granulated matrix in which vascular canals ramify.

Only the left tooth of the adult remains in its socket—the right had previously been extracted. The socket is situated at the junction of the symphysis with the body of the lower jaw, but more of the tooth is implanted in the body than in the symphysis. The length of the extracted tooth is fourteen inches, six and a half of which had been included in the alveolus, or surrounded by the gum. The breadth of the tooth where it emerged from the alveolus is three inches and a half. Each tooth consisted of a denticle proper and a strap-shaped shaft. The shaft is laterally compressed, and as it emerged from the socket it curved obliquely backwards, upwards and inwards, so that its inner concave surface had been in relation to the side and dorsum of the beak. As

the summit of each tooth passes to the opposite side of the middle line, the two teeth cross each other on the dorsum of the beak, and from the smooth appearance of the anterior border and inner surface of each shaft it is evident that they must have rubbed against each other or against the beak during the movements of the lower jaw in the act of opening the mouth. The shaft represents, though on a much enlarged scale, that part of the young tooth which has been named the fang. The denticle proper projects almost directly upwards from the outer edge of the upper end of the strap-shaped shaft, where it becomes continuous with the anterior border. It is triangular in shape, its base being half an inch, whilst its diameter from apex to base is three tenths of an inch. The base springs abruptly from the shaft, and some irregular patches of a glistening white enamel forms its outer surface; but the enamel is not continued upwards to the apex of the tooth, which is formed of dentine. In Professor Owen's figure of the denticle of the tooth of the original specimen, whilst the enamel is apparently worn off the tip of the denticle, the base is represented as enveloped by a more complete layer than in this animal. It is also stated that the matrix, by which is obviously meant what I have called the shaft of the tooth, is calcified without enamel. In the extracted tooth the alveolar end is closed, and terminates, as in Professor Owen's description of the original specimen, in a solid jagged border. The surfaces of the embedded part of the shaft are grooved with irregular longitudinal furrows, and of a brownish colour. The surfaces of the protruded part again are comparatively smooth and of a yellow colour. On a longitudinal section being made through the shaft from the alveolar border to the upper end close to the base of the denticle, the shaft was seen to be solid throughout, except for a minute mesial chink one tenth of an inch long, and admitting only the point of a fine needle, which was situated seven tenths of an inch from the upper end of the shaft. To the naked eye the shaft consisted in the greater part of its length of an external cortical part investing a central band. The cortical part is of a dull yellow colour; at the alveolar end it forms a thin lamina on each surface of the tooth, but

at and near the line of emergence from the gum it is about two tenths of an inch thick, and on the extruded part of the shaft it averaged about one tenth of an inch in thickness. The cortical layer consisted of cement containing well-marked lacunæ and canaliculi. In the centre of many of the lacunæ a minute solid particle was situated, apparently the dried and shrivelled mass of nucleated protoplasm which occupies the lacuna in a living tooth.

Sections through Haversian canals were occasionally seen in the cement, more especially in its deeper part. The surface of the section through the cement was marked by numerous lines placed parallel to each other and to the surface of the tooth, which gave it a laminated appearance. In the alveolar part of the tooth, and in the larger portion of the protruded part of the shaft, the cortical layer was in apposition with the central band, which had an opaque white appearance, and varied in breadth from two tenths to four tenths of an inch. This band was traversed by canals, some of which were continuous with those of the cement, though others were divided transversely and obliquely. The matrix between these canals had a granulated appearance. The opaque central band had, therefore, the structural characters of the modified vaso-dentine described in the young tooth. The upper end of the shaft, in proximity to the base of the denticle, is complex in structure and consists of several layers; the most superficial consisted of cement, in which, however, no Haversian canals were seen. Immediately subjacent to this was a second layer, thicker than the cement and of an opaque white appearance; it had the same general structure as the central band of the shaft, and the chief vascular canals were directed perpendicularly to the surface of the tooth. The third layer was from one third to one fourth the thickness of the second, and was even more opaque; some vascular canals were seen to pass at intervals from it into the second layer. Subjacent to the third was a fourth layer, which was about equal to it in thickness; it was very translucent, and contained undulating and branched dentine tubes, which ran outwards to the third layer. In one or two places the third layer was less opaque

than usual, and could be seen to contain closely-aggregated tubes, not unlike dentine tubes, in addition to the vascular canals already referred to; the third layer may, therefore, be regarded as vaso-dentine, whilst the fourth is pure dentine. As these two layers were traced from the summit to the sides of the shaft they were seen to blend with each other; the third lost its great opacity, the tubes of the dentine disappeared, and vascular canals occurred only at considerable intervals. About an inch from the summit of the tooth these layers ceased to be recognisable. Subjacent to the dentine layer in the summit of the shaft was a fifth layer, which formed the central portion of this part of the tooth. It had essentially the same structure as the second, but the main stems of the vascular canals ascended almost vertically so as to be divided longitudinally in the vertical section through the shaft. Many shorter canals, which had, doubtless, connected the vertical canals with each other, were, however, divided obliquely or transversely. Along the surface of apposition of this layer with the dentine sections through a canal were seen, into which some of the vertical canals were traced. Below, where the dentine terminated, the second and third layers became blended with each other, and together formed the white opaque band in the centre of the shaft of the tooth, so that they, like it, had the structural character of the modified vaso-dentine. The minute mesial chink in the shaft already referred to was a space in the fifth layer, and represented all that was left of the pulp cavity.

We may now proceed to inquire by what process the unprotruded tooth of the young *Mesoplodon Layardi* assumes the remarkable form and structure exhibited by the tooth in the adult animal. It must be observed that no change takes place in the shape of the denticle or crown proper; in its size, however, there is a slight diminution in the adult. This is doubtless due to the friction to which the denticle would be subjected soon after it had projected beyond the gum. For when the growth of the tooth had proceeded until it projected beyond the mouth of the animal, the denticle could have suffered but little from the effects of friction, as it is set at such an angle to the shaft as to be

directed away from the animal's snout, and towards the water in which it swims. That the surface of the denticle does undergo some slight loss of substance after it is protruded beyond the gum is evident, however, from the disappearance, to a large extent, from its surface of the cap of enamel. We are to look, therefore, for an explanation of the mode of production of the peculiar form of the adult tooth, to changes in the fang, by means of which it is converted into the strap-shaped shaft. These changes are due to an enormous growth of two of the tissues of the fang, viz. the cement and the modified vaso-dentine. As has already been stated, both these structures are present, though in proportionately small amount, in the fang of the young tooth, whilst they make up almost the entire mass of the strap-shaped shaft of the adult. By their growth the pulp cavity is obliterated, except the merest rudiment near the upper end of the shaft. Similarly, the dentine, which exists as a very definite layer in the fang of the young tooth, is reduced in the shaft of the adult tooth to a layer situated only at its summit. By the growth of the cement and modified vaso-dentine, not only does the tooth protrude from its socket and the gum, but from the mouth, so as to curve around the side of the snout in the manner already described, and which would necessarily limit the power of opening the mouth.

The cement undoubtedly owes its origin to the alveolo-dental periosteum, which will serve as a centre of formation of new cement so long as the growth of the shaft continues. It is not possible to speak so positively of the origin of the tissue which constitutes the opaque central band of the shaft. If it be a modified vaso-dentine, then one would have to look to the pulp for its seat of production, but if it be a modified cement, then it would arise from the alveolo-dental periosteum. In the latter case, therefore, almost the entire shaft would be of periosteal origin. The tooth differs most materially from the tusks of the elephant or the narwhal, in which the pulp cavity is persistent, and the continuous growth of the tusk is due to the conversion of the pulp occupying that cavity into dentine.

In the original specimen from the Cape, described and figured by Dr. Gray and by Professor Owen, the teeth were not so large as in this animal, in which, indeed, the teeth have attained a size greater than in any previously recorded specimen. Dr. Gray states that the length of the anterior edge of the exposed part of the tooth of this specimen was nine inches and a half, while in this one the same border was ten inches to the base of the denticle, and nearly an inch more to the highest part of the shaft. Nothing is said by either of these authors of the teeth crossing each other on the dorsum of the beak, and in the front view of the teeth in the jaw given by Dr. Gray the summits of the shafts are represented as touching, but not crossing.

From Dr. Hector's short account of the teeth in his specimen, which was caught at the Chatham Islands, it is obvious that his animal was younger than the specimen herein described from the Cape. The teeth in the New Zealand jaw are only six inches long and three inches wide, so that they could have projected only at the side of the beak and not reached its dorsum. From the notes taken by Mr. Mosley is extracted the following more complete account of these teeth, and a comparison of their characters with those of the Cape specimen. "When the anterior margins of the teeth in the two specimens, at the spots where they emerged from the alveoli, are placed accurately side by side at the same level, the posterior margins of the teeth in the New Zealand jaw reach back and correspond in sweeps of curve exactly to the vacant alveolar spaces which are conspicuous immediately behind the teeth in the Cape jaw. The teeth in the New Zealand specimen are thus inclined at a less angle than they are in the Cape one, and it appears that the teeth, as they increase in age and length, become tilted up towards the vertical, leaving vacant alveolar spaces behind them. Possibly they are dragged up by attempts to open the jaw after they have overlapped. In the New Zealand specimen the dentinal caps are about twice as large as in the Cape one, and proportionately thick and stout. In both these caps are, when the teeth are *in situ*, almost vertical in direction, having thus, curiously

enough, the original direction which they had when within the young alveolus, notwithstanding the curving of the hypertrophied fangs. In the New Zealand specimen, the fangs being little curved, the caps are thus almost parallel to the fangs, or only slightly inclined outwards from them, whereas in the Cape specimen the caps are directed at right angles to the fangs, which, towards their tips, are so bent as to be almost horizontal. The alveolar regions of the fangs present in both specimens a similar series of ridges terminating in denticulations. The tips of all the denticulations are closed in the New Zealand specimen, and there is no trace of a pulp cavity, notwithstanding the animal may be assumed to be young and with its teeth yet to grow, which it would do by a continuous addition from without by a periosteum which acts the part of a persistent pulp.

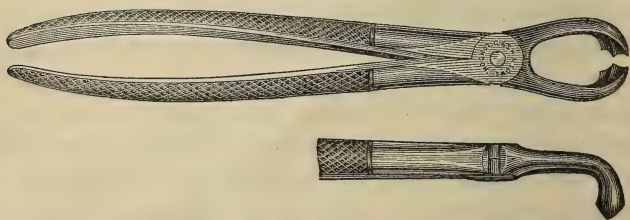
"The New Zealand teeth are much less curved than those from the Cape. If the dentinal caps are placed in apposition and parallel to one another, the younger New Zealand teeth are seen to be nearly two and a half times as broad as the older teeth from the Cape at the place of attachment of the caps of dentine. In each place the cap is placed on the anterior corner of the somewhat square-ended tooth, hence a large portion lies behind the cap in the New Zealand specimen, and but a small portion in the one from the Cape. On the anterior margin of the New Zealand teeth are semilunar excavations, cutting into their substance and evidently caused by wear. In the Cape specimen there is no trace of this wear, or a very slight depression may possibly mark it. In a skull described by Dr. von Haast the length of the anterior edge of the exposed part of the tooth was 8.74 inches, and the anterior edge was not worn away, but both in it and the Chatham Island specimen, described by Dr. Hector, a sufficient space existed between the upper ends of the pair of teeth to allow of the beak to pass when the animal opened its mouth. Dr. von Haast states that the animal was a full-grown male, and from the ossification of the epiphyses he judges it to be of mature age.

The observations which I have now recorded on the non-erupted teeth of *Mesoplodon Layardi* prove that in the

earlier stages their structure does not differ materially from the ordinary type of tooth one meets with say in the human or carnivorous jaw, the crown being covered by enamel, the fang by cement, whilst the great body of the tooth consists of dentine, in which is a well-marked pulp cavity communicating with the exterior by a slit-like aperture at the root of the fang. The exceptional character which these teeth exhibit in the erupted condition is due to the disappearance of the enamel from the crown, to the cessation in the development of the ordinary dentine, to the excessive formation of osteo-dentine, of modified vaso-dentine, and of cement, by means of which the pulp cavity becomes almost obliterated, and the fang assumes dimensions which lead to the production of a tooth having the very remarkable form and relation to the beak which I have described.

Manipulative Miscellany.

NEW LOWER WISDOM FORCEPS.



MESSRS. C. ASH & SONS have made a pair of forceps with long blades terminating in hawk's-bill jaws, set at right angles, designed for lower second molars and wisdom teeth, especially applicable to cases where the teeth are much broken down or it is impossible to get the mouth much open, the length and shape of the forceps enables the operator to insert the blade sideways over the tooth to be extracted.

A SIMPLE ARTICULATOR.

MR. E. J. MARA, Scarborough, makes this by closely coiling two stout wires round a strong knitting-needle. The first wire is coiled about an inch and a half, having its ends straight and about three inches long. These are to lie over the upper model and be embedded with plaster. The second wire is coiled for about half an inch beyond each end of the first coil, the ends being carried downwards to the depth of a pair of models, and then bent at right angles so as to pass under the lower model, there to be embedded also. Withdrawing the knitting-needle, which may be short, divides the hinge and disarticulates the models if required, and if the wires are only straight and parallel the frame can be easily detached and replaced. Where there are no teeth to check the bite a perpendicular wire resting on the upper model and embedded with the lower answers well as a stop.

MR. GEORGE CUNNINGHAM'S NEW BRACKET
INSTRUMENT TABLE.

MR. RUTTERFORD has Mr. George Cunningham's "bracket instrument table," the novelties of which are—a glazed ornamental tile top, which is unlikely to be stained or otherwise damaged by the accidental upsetting of chemicals. This is bordered with a raised ledge, serrated all round for the convenience of placing instruments ready for use, where they cannot shift position or roll together. It is supplied with drawers all round, one of which is ingeniously arranged as a cotton-wool holder, the wool being held in a box under crossed wires in such manner that with one hand the operator can obtain as much or as little as he pleases, and having used it on an instrument to cleanse a cavity, he can place it through a diamond-shaped aperture with very acute angles at two ends, and by drawing the instrument away the used wool falls out of sight into a little box. The action is very like that of a miniature bootjack, and the idea neat and cleanly in the extreme.

NEW IMPRESSION TRAY FOR PIVOTS.

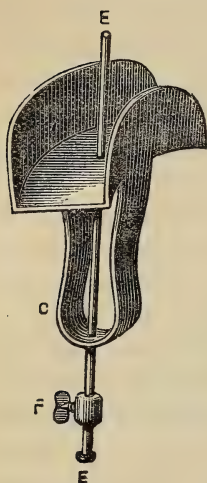


FIG. 1.

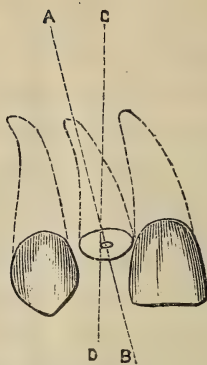


FIG. 2.



FIG. 3.

THE Dental Manufacturing Company have a tray for the above purpose, with which, if their instructions only be faithfully carried out, an absolutely reliable impression may be depended on in which the positions of the nerve canal and the surface of the stump towards each other never vary. The instructions are:—"Fill the tray (Fig. 1) with 'Godiva' or other hard-setting modelling composition, and press the pivot-pin (E) right through it. Warm the surface of the 'Godiva' over a spirit lamp. Pass the pivot-pin (E) to the top of the pivot cavity in the root, and gently slide the tray up the pin sufficiently far to take a good impression. When hardened place the set screw (F) close to the handle of the tray (G), and fix it. Withdraw the pivot-pin, which can only be done in the direction of A B (Figs. 2 and 3), when the impression may be removed in the direction of C D, avoiding 'drags' or shifting of the pivot-pin. Replace the pivot-pin, which will be found to accurately retain the relative position of the pivot cavity with respect to the plain of the root's surface, whilst the set screw (F) will unerringly adjust the depth of the pivot cavity."

British Journal of Dental Science.

LONDON, APRIL 15, 1882.

THE DISSEMINATION OF KNOWLEDGE.

THE medical profession in Australia is showing a unity, fraternity, and praiseworthy determination to stifle petty differences, that is by no means to be despised, and might most profitably be imitated by more matured communities. Mutual forbearance means mutual goodwill, and mutual good-fellowship means more rapid progress by means of mutual help and free interchange of professional information. The 'Australian Medical Journal,' in its opening remarks for the new year, makes this gratifying statement:—"Ethical disputes, once so common in the profession and so dangerous to any concerted action, have been frowned down or laughed away; and where differences have existed between individuals or societies there has been manifest a spirit of conciliation and a tendency to *rapprochement* which we trust will become more and more pronounced." Would that we could say the same of the members of our profession here! Under existing circumstances, perhaps far more important would it be to us to take to ourselves the suggestions that are put forward for the general advancement of knowledge in the following passage:—"We would again urge upon the staff of the various hospitals the wisdom and expediency of reporting as regularly as possible the cases of interest which present themselves for observation. The habit of reporting has a most important reflex influence over the character of ward work; it tends to bring the scattered members of the profession more into sympathy one with another, it prevents many valuable facts from escaping notice, and these fragmentary records may hereafter furnish the material for wide deductions, or the illustrations of important truths." None can gainsay the truth of this—it is incontrovertible, and yet how few of us think of the real practical good that must follow a general reporting of the every-day experiences of practice.

Many from supineness, some few perchance from motives of selfishness, but many more from dislike to associate *little things* with their names, but most of all, no doubt, from failing to see the importance of collecting together such minor items of experience and means of surmounting the little but daily difficulties we meet with. It is pithily put in a further quotation from the same source:—"However short a report may be, if it display a fact of interest to the writer it is bound to be acceptable to many of our readers, and we trust that no contributor will hang back on account of the brevity of his communication, *for short articles are often read carefully when longer and more pretentious ones are passed over.*"

The italics are our own, but how indisputable and important is the statement? How many most useful little matters are allowed to remain inert from this deplorable habit of non-communication. It is as they say "the habit of reporting" that is most required. Once that is acquired there would be no lack of useful information to impart and receive. What an amount of good is done by the informal chit-chats at our Societies' meetings, and how much more benefit would it be if, instead of being heard by the few, it were published and so spread broadcast, and in a form that would bear referring to by deficient memories. And beyond that, as it is the custom of journals to copy from one another all that is considered worthy of repetition, the information would, as it were, be multiplied and so bring together the thoughts of men "scattered" over the whole face of the globe. We heartily thank our contributor, Mr. Harding, for his remarks on this subject, and the practical way in which he anticipates our wish, and we only hope that his communication may be the forerunner of a long series of reports and hints not only from hospital but also private practice, all over the country. Be it remembered that man is never too old to learn. Never so full of knowledge but that more may be gained. The most experienced oftentimes obtain it from the least so. We earnestly trust our readers will bear this fully in mind, more especially the younger portion of them, and act upon it.

Reports of Societies.

ODONTOLOGICAL SOCIETY OF GREAT BRITAIN.

ORDINARY MONTHLY MEETING, HELD 3RD APRIL, 1882.

S. LEE RYMER, Esq., President, in the Chair.

CASUAL COMMUNICATIONS.

MR. GEO. HOCKLEY showed a second right upper molar joined to the adjacent wisdom tooth. The patient from whom it was extracted had suffered for some time from severe neuralgic pains, which appeared to be referable to the second molar. It was removed without much difficulty, the third molar coming with it. The roots of the suspected tooth were found to be extensively exostosed.

MR. ACKERY presented to the museum two specimens of unilateral syphilitic deformity of the central incisors which he had exhibited at a previous meeting, and which had since been carefully mounted by Mr. Weiss. He believed such cases to be very rare.

MR. COLEMAN said he did not think that unilateral syphilitic deformity of the teeth was very rare. He had certainly met with several instances of it, but had not taken the trouble to get impressions of them. He handed round a model showing what appeared to be two supernumerary centrals of markedly syphilitic type, but it might be that these were the true centrals, and that the teeth behind were supernumerary. The patient afforded other evidences of syphilitic taint.

MR. GURNELL HAMMOND presented to the museum the baboon's tooth which he had recently extracted at the Zoological Gardens. It was a first right upper molar. He had not much to add to the account which had appeared in the papers. They had considerable difficulty in chloroforming the animal since he preferred swallowing the chloroform to inhaling it, so that it took about forty minutes to get him under its influence. Then Mr. Hammond had great difficulty in forcing up the instrument owing to the great strength and thickness of the alveolus. Having extracted the tooth he tried to enter the antrum through the alveolus but could not. He then perforated it with a trochar through the outer wall and matter escaped. The

patient was at once relieved by the operation, and had got on very well since.

Mr. H. MUMMERY then read a communication from Mr. Edwin Cox, L.D.S. Eng., formerly of Preston, Lancashire, but now settled at Auckland, New Zealand, giving notes of a case of cancer of the right superior maxilla which ran a very obscure and insidious course in a strong healthy-looking man, aged forty-four. It began with slight discharge from the socket of the second right upper molar, and in spite of careful examination by several surgeons the real nature of the disease could not be ascertained for several months. The patient died of hæmorrhage after a very painful illness.

THE LIMITATIONS OF DENTAL SURGERY.

Mr. GADDES read a paper on this subject, using the following case as a text:—A girl, aged 16, was sent by a general practitioner to the National Dental Hospital for advice respecting an abscess-like growth, which bled frequently, and which was connected with the buccal aspect of the right first upper molar. Mr. Henri Weiss, who first saw the case, determined to remove the tooth and growth under the influence of nitrous oxide. Owing, however, to the very transient effect of the gas only the tooth and the bulk of the tumour could be removed. A microscopic examination of this, which was about the size of a bean, showed it to be a round-celled sarcoma and very vascular. It was attached to the periosteum of the two buccal roots of the tooth, but the palatine root was firm. The patient herself was in a low and anæmic condition. Next day it was found that a large mass of granulations filled up the space recently occupied by the tooth, and three days later this had considerably increased in size so as to come in contact with the lower teeth on occlusion. Nitrous oxide and ether was then administered, and Mr. Gaddes removed the whole of the outer alveolar plate with the hyperplasia. On several subsequent days the granulating surfaces were cauterised with nitric acid, but in spite of this the tumour recurred with considerable rapidity, and gave rise to occasional hæmorrhage, and at the end of a fortnight it was evident that something more must be done. Gas and ether were therefore again administered, and the whole of the socket of the first molar with the gum tissue around, nearly to the floor of the antrum, were gouged out, the second bicuspid and second molar not being interfered with. This had the desired effect. Some rapidly-growing granulations were touched with caustic potash, and periostitis of the second molar was relieved by opium fomentations. The

wound healed soundly, and when last seen, four months after the operation, not only had there been no recurrence, but it was difficult to believe from the appearance of the part that so much of the bone had been removed.

Apart from the surgical interest of the case, Mr. Gaddes solicited the opinion of members as to whether the operations described should be recognised as being within the limits of Dental Surgery. The border line between general and Dental Surgery was at present ill defined. The text-books gave no assistance in solving the question, for while they dealt more or less fully with affections of the parts contiguous to the teeth, they rarely gave any opinion as to whether the treatment of a certain disease came within the scope of the general or of the special practitioner. For instance, with regard to diseases of the antrum; these may arise quite independently of any Dental irritation, yet they were all treated of with about equal fulness quite irrespective of their probable origin. The same might be said of tumours of the gums, &c. He suggested, therefore, that the Society might with much utility express some opinion as to what should be considered the limits of Dental Surgery. It was a subject which had not, so far as he knew, previously been discussed by the Society, and he believed that such an expression of opinion would be of great value as a rule of guidance to members.

Mr. S. J. HUTCHINSON appealed to the President as to whether the discussion of an ethical question of this sort was within the province of the Society. He had always understood that the meetings were to be devoted to the discussion of scientific questions only.

The PRESIDENT said he saw no reason why the Society should not discuss the question if it was so minded, indeed, he knew of no other body which was better qualified to do so.

Mr. F. HENRI WEISS said that a somewhat similar question had arisen during the discussion of a paper by Mr. Stocken. The right of Dental Surgeons to *prescribe* was then called in question, and their late President gave it as his opinion that, "so long as there was any prospect of saving a tooth, Dental practitioners were justified in using any means, either constitutional or local, to this end." As to the case which Mr. Gaddes had just related, he was not prepared to say that had they at first known its exact nature they would have acted as they had done. It looked at first an apparently simple case, and it was only after the first operation that they found they had to deal with a more serious matter than they had anticipated. There was no

doubt also that had things gone wrong with the patient they might have found themselves in a position of some difficulty. The object of the paper was, however, not so much to decide whether they had done right or wrong in treating this particular case, as to ascertain whether any decision could be arrived at as to what should be generally considered to be the limits of Dental Surgery.

Mr. HUTCHINSON reminded the Society that he had always been a loyal supporter of the L.D.S. as being a full qualification in Dental Surgery. He was, however, strongly of opinion that the Dental license entitled its possessor only to practise Dental Surgery, and that if he went on to practise oral surgery he should be required to obtain a full qualification as a surgeon. He thought the admission of Mr. Weiss, that, had anything gone wrong with this patient, those who took charge of her might have found themselves in difficulties, was very much to the point. He was himself a M.R.C.S., but practising simply as a Dental Surgeon he always referred oral cases to a general surgeon or to a general hospital; they might very probably need medical treatment, bandaging, or visiting at their own homes, and these were duties which he was not prepared to undertake.

Mr. STOCKEN thought that Mr. Rogers's statement did not go quite far enough. The duties of a Dental Surgeon did not necessarily end when the tooth was extracted; for instance, he was not unfrequently called upon to arrest hæmorrhage. He thought it might be said that so long as the disease to be treated *arose from a tooth* the Dental Surgeon was justified in treating it either constitutionally or locally. It might be that some of those now in the profession were scarcely competent for such extended duties, but the province of the Dental Surgeon should not be curtailed on this account; what was required was that Dental practitioners should be educated up to their proper station. Mr. Stocken then related the case of a medical practitioner who had been suffering for some time from facial paralysis. Mr. Stocken found he had a diseased upper molar, and suggested that this might be the cause of the paralysis. The doctor said he had never thought of it, but on being shown a case of the sort mentioned in Mr. Salter's book, begged that the tooth might be extracted. This was done, and the paralysis disappeared within a week.

Mr. R. H. WOODHOUSE thought that Dental practitioners would do well to confine their attention as much as possible to the care of the dental tissues. Apart from the risk and anxiety attached to the treatment of such cases as that described by Mr. Gaddes, any general extension of the

practice of Dental surgeons in that direction would certainly involve them in difficulties with the medical profession generally.

Mr. LAWRENCE READ having deprecated the continuance of the discussion as a waste of time and not likely to lead to any practical result,

Mr. GADDES replied that he thought a careful definition of the limits of Dental surgery was much wanted, and that the Society would be doing the profession a service by laying down a rule which would be a guide to those who wished to practise Dental surgery only.

At the conclusion of the meeting, Mr. A. B. Verrier, of Weymouth, exhibited his Continued Gum Furnace in action, and demonstrated the process of firing a denture, an account of which will be given in next issue.

ODONTO-CHIRURGICAL SOCIETY.

ANNUAL MEETING, MARCH 13TH, 1882.

JOHN SMITH, Esq., M.D., F.R.C.S.Ed., President, in the Chair.

THE SECRETARY read the minutes of the previous meeting, which were approved. The following gentlemen were proposed for election:—Warwick Hele, L.D.S., Carlisle; D. A. Wormald, D.D.S. and L.D.S., Bury; and P. Crombie, L.D.S., Aberdeen.

The TREASURER (Mr. Finlayson) reported that the income of the Society for the past year amounted to £47 15s. 6d., and the expenditure to £45.

The names of two members who were five years in arrears with their subscriptions were dropped from the roll; and it was agreed that in future the Society should be more strict in carrying out the rules in regard to the payment of subscriptions.

Dr. WILLIAMSON moved the re-election of the present office-bearers. He said that last year seemed to have been a very prosperous one, and the number and quality of the papers read had shown that the Society was still to the fore. He hoped that it would long continue to be so. (Applause.)

Mr. LIPSCOMBE seconded the motion; which was unanimously agreed to.

The following are the office-bearers for 1882-3:—

President.—J. Smith, M.D., F.R.C.S. Ed.

Vice-Presidents.—A. Wilson, L.D.S. Ed., and J. Walker, M.D., L.D.S. Eng., London.

Treasurer.—Matthew Finlayson, L.D.S. Ed.

Secretary.—W. Bowman Macleod, L.D.S. Ed.

Curator and Librarian.—G. W. Watson, L.D.S. Ed.

Council.—Walter Campbell, L.D.S. Eng., Dundee; Leon J. Platt, L.D.S. Ed., Stirling; Malcolm MacGregor, L.D.S. Ed.; Austin Biggs, Glasgow.

Principal WILLIAMS, Edinburgh, who was received with loud applause, then made an interesting statement on the subject of "Dentition in the Horse and other Animals," which will be found at page 364.

THE DENTAL CURRICULUM.

The CHAIRMAN said:—Some questions of considerable importance to Licentiates in Dental Surgery having been lately before the Executive Committee of the General Medical Council, a very uniform opinion has been expressed by the resident members of the Odonto-Chirurgical Society that an opportunity should be afforded at this, its annual and larger meeting, of considering such matters, and ascertaining the views of the Society regarding them. Members are doubtless aware of the letter addressed by Professor Turner, one of the Edinburgh representatives at the Medical Council, to the Executive Committee of that body, wherein he desires to obtain more specific information in reference to certain important details applying to the education, preliminary examination, and registration of Dental students. In that letter, which is dated October 31st, 1881, Professor Turner asks whether, as in the case of medical students, Dental students ought not to be allowed to count one year of an apprenticeship, as one year of the four of professional study required. Again, three years' instruction in mechanical Dentistry is required; and Professor Turner draws attention to the fact that it is not stated whether those years must be taken during what is termed the four years of professional study, or may be taken in whole or part antecedent to registration as a Dental student. He therefore considers it advisable that the expression, "Four years in professional studies," should be more precisely defined, and adds that it seems to him only reasonable that some portion, if not the whole, of the three years to be spent in mechanical Dentistry should be allowed, even if taken before registration, to count, since there is nothing rendering a literary examination necessary previous to entering on workshop duties, as there is prior to entering on a course of scientific lectures; and again, that it is scarcely practicable to go through an effi-

cient training in the workshop, if during the same period the student's time is to be occupied in attending lectures and hospital practice. Such is the general import of Professor Turner's letter, which will probably lead to a settlement of the matters touched upon at the next meeting of the Medical Council. But pending such settlement, it seems fitting and expedient that this Society should express whatever opinions it may entertain in connection with this subject. Perhaps the most important matter for consideration here is the difficulty pointed out in the last clause of Professor Turner's letter when he alludes to the inexpediency, if not impracticability, of an efficient workshop training being followed out while attending lectures and hospital practice, since it must be remembered that, even were there sufficient time for such training, the centres of Dental education and examination are very few in number, and in view of the possible influx of Dental students from provincial districts year after year, it would be difficult to find in such centres an adequate number of registered practitioners willing to afford each candidate three years' mechanical instruction in his workshop. These seem the principal questions at issue on this matter. Their importance is considerable, and Professor Turner certainly deserves our thanks for the trouble he has taken with regard to them. He quite agreed with Professor Turner that it was necessary to bring this matter before the General Medical Council. He thought it ought to be left to the option of the candidate whether or not his mechanical instruction should be taken before or after his preliminary examination. Many lads coming from provincial districts might be very good mechanical Dentists before they come to the town. A lad might have been an assistant to his father, and it would be a very hard case to say that, because he had not taken his preliminary examination before he became a good mechanical Dentist, he must enter the workshop for other three years. He also thought that the fact of a lad having spent three years as an apprentice in the workshop might be taken into account as one of the four years of professional instruction of the curriculum. He held that the mechanical training was equally important with the class and hospital instruction; and he would suggest that the four years' professional instruction, more properly so called, might be reduced to three years, in virtue of a candidate having completed his mechanical instruction. The amount of class attendance and hospital attendance demanded would occupy any student fully two years. It was not thought very advisable by the licensing boards to cut it so very fine as that. They could scarcely cut it down to less than three years; but at

present four years was absolutely required after passing the preliminary examination. A lad must be a Dental student for four years at present, and during that time he was expected to take his mechanical Dentistry. But if a student who had a good mechanical education came forward, it would be desirable to say to him, "As you are already a good mechanical Dentist, we will consider three years sufficient for you." This would diminish the four years by one year, in consideration of his having acquired a knowledge of mechanical Dentistry.

Mr. MACLEOD said that he thought there was a slight misconception with regard to the subject. The Medical Council had not said that four years of professional study should be gone through by each Dental student, but had said to the medical student, and therefore by implication to the Dental student, that the preliminary examination in arts should be passed four years prior to going up for the final professional examination. They, however, stated the kind and quantity of professional instruction which he had to receive during the period of study. Amongst the rest was this: "that three years' mechanical Dentistry should be gone through;" and he (Mr. Macleod) understood that these three years of mechanics formed part of the professional study. He held that if it was not so it ought to be so; because the mechanical training that a young man received was the fundamental, and therefore an essential portion of his education. As the Odonto-Chirurgical Society, they must insist on the fact that the mechanical education the student received should be recognised as part of his professional training. They must not allow it to be taken as such *ex gratia* by any licensing body, or by the Medical Council. This being granted, they find that the other subjects of study, as ordained by the Medical Council, occupied two years, making in all a period of five years' study. The English College of Surgeons, which held a charter of its own, and was altogether independent of any control of the Medical Council, enacted that a Dental student should be engaged during four years acquiring his professional knowledge; and must pass his preliminary examination previous to beginning such course. But with what the Royal College of Surgeons in England resolved upon we have nothing to do. We are subject to the control of the Medical Council, and to whatever they enact we must give due submission. Keeping this in view we may see good reason in the question put by Professor Turner, and possibly find that the answer to it is simple and evident. Professor Turner, taking a sound and common sense view of the situation, asks, Why should the Dental

student be compelled to pass his preliminary in arts four years prior to his final examination, when that preliminary in arts is not necessary to the acquisition of proper mechanical knowledge, although it is absolutely necessary to the thorough understanding of the purely scientific and technical studies, which the student takes up when he enters on hospital practice and college tuition? This question contains within itself the answer. If the Medical Council enact that the Dental student should pass the preliminary four years' *prior* to his final professional examination, they would commit a mistake; for, having resolved upon a curriculum which necessitated five years' study, and of these three to be devoted to the mechanical branches of Dentistry, it must be evident that the knowledge implied in the preliminary is not absolutely necessary for such mechanical instruction; while during these three years the student might carry on a course of reading, the better to qualify him for the pass. Then, why compel such students to take the preliminary until they are about to enter upon their collegiate studies? If, on the other hand, the Medical Council deem it fit to compel the student to pass the preliminary before beginning any of his professional studies, then, as these three years' mechanical training do form part of his professional training, the Council must, to carry their action to its logical conclusion, ordain that in the case of a Dental student this preliminary must be passed five years prior to his going up for his final examination. He (Mr. Macleod) was sorry to see that the Edinburgh College of Surgeons had returned an answer to Professor Turner's letter which contradicted itself. This answer was to the effect that the three years' mechanics might be taken either *before* or *after* the preliminary, but that four years of professional study had to *succeed* the preliminary; and that time spent prior to this in acquiring mechanical knowledge would not count. The College of Surgeons, however, proposed that *while these years are not to be recognised, they were at the same time to be held valid*. Valid for what? How could anything be held valid that was not to count? Now, let them think of the cost entailed upon a lad who had served three or five years' apprenticeship in the country (as all cannot serve their time in the city), if these three or five years are not counted as part of his professional studies. It simply meant that instead of five years, our country apprentices would require to spend seven or nine years in professional study. Mr. Macleod also said that he thought there was an erroneous limiting of the term *professional studies* to the collegiate course, and demanding four years of such; when

it is quite possible for a lad of average ability to fulfil the collegiate requirements of the Medical Council in two years. Even taking the way in which Dr. Smith has put the matter to-day, one year's waste of time is still necessitated to the student, as it compels him to take three years to accomplish what he might do in two. This is a gross injustice to the student. He did not go so far as to say that every young man should be recommended to go through in two years; some of them might take three or even four; but if that was through force of circumstances, inclination, or natural impediment, no one could help it. But it was not for any body of men to place legal impediments in the way of persons fulfilling a task which had been set before them, or to make the access to the profession more difficult than it requires to be. What advanced education and higher culture might demand in the future he could not say; what they had to do with was the present. And looking at the necessities of their training he thought that the Society should give it as their opinion that the preliminary examination should not be demanded of the Dental student until immediately prior to his beginning the collegiate education. He would then be permitted to take his mechanical training in such places as his circumstances compelled; and that, as now, for a period of three or more years as he choose; and the members of the Society, as practical men, knew that even five years was a short period in which to turn out a really first-rate mechanical Dentist. That this would be for the benefit of the profession and the public he had little doubt, as the following time-table of differences between time spent in five years, and in a three years' apprenticeship, and the time demanded under the regulations of the Royal College of Surgeons of England, would most conclusively show. In a five years' apprenticeship of fifty-two hours per week, and allowing a month each year for sickness and recreation, he found that the student spent 12,480 hours; and in a three years' apprenticeship 7488 hours, in learning the mechanical portion of his training. But if during his collegiate course the three years' pupil took but one month's holiday, and devoted the remainder of his vacation to mechanical work, he would spend in all 8320 hours. In the case of the student fulfilling the requirements demanded by the Royal College of Surgeons of England, the whole time which he could devote during the four years to the acquirement of the mechanical part of his profession was 3744 hours, or three and a half times less than that of the five years' apprentice. A recognised authority had said that the Dentist who was possessed of good mechanical abilities

and little surgical training, would be likely to do less injury to his clients than one who possessed the advantage of all the surgical training, and had little or no mechanical ability. And in view of this opinion, and the time-table already given he would leave the Society to judge as to the course of training best calculated to produce an efficient practitioner. He therefore moved the following resolution as the deliverance of the Society on the subject:—"That although the Society are of opinion that the three years' mechanical training is, and always must be, an essential part of the professional education of the Dental surgeon, they do not consider it necessary that the Dental student should be compelled to pass the preliminary examination in arts until prior to beginning his hospital and surgical studies."

The CHAIRMAN said he quite agreed with what Mr. Macleod had said. The question at issue in Mr. Turner's letter, however, was not a change in the curriculum, but it was to interpret how the studies prescribed were to be arranged, and that was the reason why the College of Surgeons did not enter into any alteration of it. The College had not entered at all into the question of the extent or duration of the curriculum, but merely whether or not the imperative amount of mechanical instruction might be taken before the other classes and the hospital instruction. The question was, what was the interpretation that was to be put on the curriculum—whether a lad might take his mechanical instruction before he passed his preliminary examination, and if so, whether it would be valid, although not in that case counting among the four years' post-preliminary studies.

Mr. MACLEOD said he did not think he had said anything that would lead it to be supposed that he wished the Medical Council to change the curriculum. He held that it was not possible (as the English Royal College of Surgeons seemed to think) for a student to do three years of mechanical Dentistry, and pass through the other portions ordained by the Medical Council, in four years. He was anxious that these three years of mechanical Dentistry should be carried out in their entirety, and that wherever passed, be it in town or country, the whole term should be honestly recognised. He thought that the Society should claim for the student liberty to pass the preliminary examination at any time prior to beginning his hospital and surgical studies.

Mr. WILSON said it was simply an absurdity to suppose that any student could take his mechanical Dentistry and medical, Dental, and hospital classes within four years.

They wanted to extend the number of years, and so were really proposing that the curriculum be altered. If they were to take three years for the mechanical and two for the medical, that would be five. If that were fixed as the minimum, they would not be interpreting the present regulations, but proposing an amendment.

The CHAIRMAN said that it was leaving it optional. The intention was not to interfere with the curriculum, but the question was, Should it be in the option of the student to take his mechanical Dentistry within the four years after the preliminary, or take it outside, before the preliminary?

Mr. MACLEOD said that the Dental Act neither fixed the kind of study nor period of study. The Licensing Bodies, under approval of the Medical Council, arrange the curriculum, and it was to clear up certain doubts as to the curriculum, as much as anything else, that had led Professor Turner to put his queries to the Medical Council. He thought that the Society ought to let their views on the subject be distinctly known.

Mr. WILSON said that they wanted to encourage the Dental students to become medical students as well.

Mr. CAMPBELL, Dundee, said that he had much pleasure in seconding Mr. Macleod's motion, and he thought it should be put to the meeting. His feeling was that they should do all they could (consistent with good service to the public) to make the attainment of the Dental license easier, and not more difficult. By-and-by the general public would require all the Dental skill they could get, and for a time there would not be so many in the ranks of the profession as now. He thought that in many cases the three years' mechanical training might be acquired by young men before coming to the centres where the medical schools are. In provincial towns the three years' mechanical training might be got, then they might pass their preliminary examination, and go to the centres, such as Edinburgh, Glasgow and London. He considered that the mechanical training was not inferior in importance to the medical.

Mr. REES PRICE said he thought that this matter was made more of a difficulty than it really was. In England most of the men who went to the hospitals passed their arts' examination at the school. He did not know anything about the Scotch education; but it seemed to him that most of the men likely to become Dentists would pass the arts' examination before they commenced their mechanical training.

Mr. WILSON said he was afraid that very few would be

qualified to pass the examination at the time they usually left school for apprenticeship.

Mr. HELE said he thought that all students, before entering on any part of their work, should pass a preliminary examination. He himself had felt the want of the arts' examination, as it had prevented him from taking full rank. While he thought they should make the curriculum as easy as possible, yet he held that those who went in for Dentistry should go in at the "strait gate" of an arts' examination.

Mr. Macleod's motion was then unanimously adopted; and it was agreed to send a copy of it to Professor Turner.

Mr. WILSON said that another important question requiring to be settled was that of registration. At present Dental students could only register in London, and he thought it should be sufficient that they register in the medical register. It would allow the classes that they attended to count for the medical curriculum also. Otherwise they must enter themselves at the same time in both to do so. Then as regarded the curriculum required by the different licensing bodies, it would be an advantage if there was something like uniformity in them. They would require something more definite than merely saying one course of lectures on a certain subject. While in Edinburgh in the medical schools the winter and summer courses of lectures must consist of a definite number, in London, he understood, these courses did not have the same number at all, and that gave the London students an advantage. It would be much better, in giving the curriculum, to state the minimum number of lectures which would constitute the course of each subject.

The CHAIRMAN said that these were very important subjects. He had had a good deal of correspondence in regard to the registration. As to the lectures in London, they were not given every day as here, sometimes only twice a week. A course of chemistry might mean a course of chemistry in a school. With regard to registration, he did not see any difficulty in allowing the students to register in any city in which there were licensing centres. As to the curriculum being made more definite and uniform, these were things that might be considered.

Mr. CAMPBELL, Dundee, said he thought it would be very desirable for those Dental students who expected some day to obtain the full membership, if the two grooves could be made to work in such a way that they could be got together more easily.

Mr. WILSON said that what he meant was that there was no reason for having a special Dental register at all.

The subject then dropped.

ALTERATIONS ON THE LAWS.

It was agreed that in future Law VII should read as follows:—"The Society may elect not more than two honorary members in one year, the election to take place at the annual meeting. They shall not hold any office or take any part in the management of the Society's affairs, and they shall," &c.

It was agreed that Law XIV should read, after the words, "notice from the Secretary," "three to form a quorum."

SPECIMENS.

Mr. WILSON read the following note of a case he had met with since their last meeting. The patient (male, aged about thirty) called on him complaining of severe neuralgic pain at the back of the right ear and temporal region. An examination of the mouth showed all the teeth on that side seemingly sound, the only peculiarity being that the upper wisdom tooth, of which only the grinding surface was visible, lay on a level with the neck of the second molar, and its lingual surface was in such close contact with the distal surface of the second molar, that he could not force a probe between them. He tried percussion without any result, but found that the tooth moved slightly in on the palate, when considerable pressure was applied. Being of opinion that it was most probably the cause of the pain, and as it was from its position quite useless, he advised its extraction, which was at once carried out. On examining the tooth, the two buccal roots were found united by a large exostosis, the palatine root was wanting, and where it should have been attached, a large opening led into the interior of the crown, which was thoroughly scooped out, not by caries, the surface being quite hard and scarcely discoloured. Standing out from the buccal portion of the cavity in high relief was the pulp, thoroughly calcified, only a small piece of the radical portion belonging to the palatine root remained, but the other two portions could be seen passing into their respective roots. Projecting from what was the floor of the cavity when *in situ* were two twigs of osteo-dentine and their anastomosis, evidently the remains of an abnormal process of the pulp, which had penetrated the dentine almost to its periphery. Whatever had caused the disappearance of the hard dentine had had little or no effect on the dark-coloured osteo-dentine which had replaced the

pulp. He passed round the tooth for their inspection, and would like to know if any one present had met with anything like it.

Dr. WILLIAMSON exhibited a cast of the face of a girl, showing a peculiarity in the teeth.

Mr. MACLEOD said he had received a specimen of excellent gum work from Mr. Hepburn, sen., London, as a gift to the Museum. Mr. Hepburn at the same time expressed regret that it was impossible for him to be with them at their dinner. Had he been present he would have occupied a distinguished position there.

A vote of thanks was then given to the Chairman, and the proceedings terminated.

STUDENTS' SOCIETY OF THE DENTAL HOSPITAL OF LONDON.

ORDINARY MEETING, MARCH 13TH, 1882.

ARTHUR S. UNDERWOOD, Esq., M.R.C.S., L.D.S., President,
in the Chair.

THE minutes of the previous meeting were read over and confirmed.

Mr. Saunders was balloted for and duly elected a member.

Mr. Morgan was proposed for membership.

The PRESIDENT announced that Messrs. C. S. Tomes and R. H. Woodhouse had decided that Mr. W. Hern's paper was most worthy of the Society's prize. It was unanimously resolved that a vote of thanks be accorded to those gentlemen for their kindness in settling the award.

Casual communications were brought forward by Messrs. W. Hern, L.D.S., Marcus Davis, L.D.S., C. Robbins, L.D.S., Rees Price, L.D.S. (per Mr. Robbins), J. J. Andrew, H. J. Gould, and Walter Harrison.

The PRESIDENT then called on Mr. H. J. Gould for his paper on "The Review of the Dental Anatomy of the *Mesoplodon Lavardi*," which we have transferred to p. 375.

A discussion followed, in which the President and Mr. W. Hern, L.D.S., took part.

A vote of thanks was unanimously accorded to Mr. Gould for his able paper.

Dental News.

The first GENERAL MEETING of the EASTERN COUNTIES DENTAL ASSOCIATION will be held on the 26th inst. at Norwich.

The SUMMER SESSION of the EDINBURGH HOSPITAL AND SCHOOL will commence on May 1st.

DENTAL STUDENTS' SOCIETY.—Ordinary Meeting on May 8th prox. at the Dental Hospital of London. Chair taken at 7 p.m.

APPOINTMENTS.

HALL, FRANK, L.D.S. I., has been appointed Dental Surgeon to Christ's Hospital, Hertford.

HARRISON, WALTER, Esq., has been appointed Assistant House Surgeon to the Dental Hospital of London.

HERN, WILLIAM, L.D.S. Eng., has been appointed House Surgeon to the Dental Hospital of London.

PENROSE, ARTHUR, L.D.S. I., has been appointed Assistant House Surgeon to the National Dental Hospital.

VACANCIES.

NATIONAL DENTAL HOSPITAL, 149, Great Portland Street, W.—House Surgeon. Salary, £50 per annum. Applications by April 26th. Candidates must be L.D.S.

SCHOOL OF DENTAL SURGERY.—Teacher of Dental Metallurgy. Applications to the Dean of the Medical School, Dover Street, Liverpool, by April 25th.

Correspondence.

[We do not hold ourselves responsible for the opinions expressed by our Correspondents.]

IRISH DIPLOMA QUESTION.

To the Editor of the 'British Journal of Dental Science.'

SIR,—I incline to the opinion that the remarks made in your last issue by the gentleman signing himself

M.R.C.S. Eng., are not only very inopportune, but are also the product of a biassed and illogical mind. I consider that those gentlemen who have had the option of possessing themselves of the Dental diploma of the Irish College or any other college, without being obliged to prosecute a prescribed system of study, have acted most judiciously in grasping such an opportunity, and are rather to be congratulated instead of being vilified and brow-beaten. For the benefit of M.R.C.S. and all others whom it may concern, I am in a position to state that the majority of these gentlemen (and for all I know to the contrary, the whole of them) are well educated and capable Dentists, having, doubtless, quite as good "antecedents" as many bearing the hall mark of the Royal College of Surgeons of England—"fellows" not by any means calculated to bring either the science of medicine or surgery into contempt. Now, as a matter of fact, there is an "examination" held in Dublin and elsewhere where candidates, presupposed to have a knowledge of mechanical Dentistry, are tested as to their acquaintance with the human anatomy of the cranial, facial, and cervical regions, the physiology of these parts, &c. Quite a sufficient test in the judgment of the examiners, to prove that the candidate is not ignorant of what might be required of him in his ordinary avocation as a Dentist. Nothing more—for the Dentist does not seek either to encroach upon or identify himself with the practice of pure surgery or medicine. Granted he has not a thorough knowledge of the general or morbid anatomy of the limbs or trunk—such is not required of him—at the same time it is quite possible he may have sufficient knowledge to warrant his being dubbed a Licentiate in Dental Surgery, and prove himself a skilful Dentist as well. Are all the gentlemen with the four years profound study, and the brand of the College of Surgeons fresh upon them, "*practical* surgeons" in the real acceptation of the term? Shade of Hunter! No! If "M.R.C.S." is dubious as to the validity of this assertion, I beg to refer him to the regulations of the Army Medical Department, which require that candidates for army appointments do pass a special competitive examination, the heads of this department not being satisfied with the ordinary qualifications. How many duly qualified practitioners have been rejected as incompetent, statistics alone will show, from which it would appear that the number of licensed quacks are about as numerous as those unlicensed.

Respecting the much maligned Irish College of Surgeons, I think no man need be ashamed of writing either L.D.S.I. or L.R.C.S.I. after his name. I believe I am not

incorrect in stating that the Royal College of Surgeons in Ireland has produced quite as reputable and experienced a class of surgeons as any college in existence. The profession of medicine and surgery in Dublin has a very high reputation. They have their schools of anatomy and lying-in-hospitals second to none, and constantly turn out physicians and surgeons of sterling practical skill and sagacity, men who can sweep away most of the prizes at home and abroad, therefore I consider it quite out of place that "M.R.C.S. Eng." should attempt to decry an institution of which evidently he has no experience.

If it so pleases "M.R.C.S. Eng.," I should certainly advise him to adopt the Dental profession, minus the "trade" couplings to which branch he evidently evinces such a distaste. I can assure him it is a profitable undertaking for a clever operator—an M.R.C.S., for instance, with an L.D.S. with or without the "I" attached. Possibly such an addition would prove positively lucrative to many M.R.C.S.'s who, not being "practical surgeons" but rather general practitioners, are per force obliged, in addition to the practice of the "art," to drive a trade in the sale of physic in the back parlour drug store, their surgical practice being in vulgar parlance "up a tree"—men who are always sailing against the disappointments of life—harping upon the dignity of a profession, but obliged to do a trade, murmuring like unto that miserable retailer of poisons, ycleped the apothecary of Mantua—"My poverty but not my will consents."

I am, &c.,

JOSEPH ABBOTT, Dentist, &c.

98, Queen Street, Exeter;
April 4th, 1882.

THE IRISH DIPLOMA QUESTION.

To the Editor of the 'British Journal of Dental Science.'

SIR,—I expect to see in your next issue other letters in defence of the Irish diploma, abler, perhaps, than mine. Still, I must ask you to let me say a few words in reply to "M.R.C.S."

To begin with, he surmises that a large proportion of the L.D.S.I.'s are too ashamed of their diplomas to have them registered. I think he tries to prove too much. His allegation can hardly be correct, when it is taken into consideration that, what with college fees, expense of going and staying in Dublin, cost of books, &c., the lowest amount expended cannot be short of £30. I hardly think any man would engage in a course of study for months,

leave his practice, and expend so large a sum of money, only to be ashamed of the diploma when he got it.

As regards the merit of the examination, that can only be spoken of by those who have undergone it. I passed last year, and my relative in London, who is, like your correspondent, a M.R.C.S. (practising Dentistry), either out of friendship or curiosity, requested me to send him the examination, both oral and written, and I did so. I am happy to say he returned me the papers, expressing himself fully satisfied with the severity of the examination, but of course I can only speak for myself.

As for the omission of the "I" I am not going to defend bad taste, and consider the reason for preferring the Royal College of Surgeons Ireland to the Faculty of Physicians Glasgow, is not because of the greater ease (if it is more easy) of the examination, but because a much larger bulk of people will appreciate a diploma from the first named Royal College, and would not understand in the least about the second named learned body.

If, as has been more than hinted, the Irish examination is considered not stringent enough, blame the College, not sneer at men who have taken months to study, and spent both time and money to obtain a diploma, professing to be equal to any in the kingdom, surely the Royal Colleges of London and Edinburgh and the Faculty of Physicians Glasgow have sufficient influence in Parliament to have the matter investigated.

Your correspondent is quite right, when referring to some letter, professing to blame medical men for prescribing for neuralgia; this is an arrogance we should never be guilty of. Still the fact remains, we are sometimes consulted by medical men for that complaint. I have been, by surgeons who have afterwards brought their patients; the cause as I take it is this, medical men treat neuralgia constitutionally only, while the Dentist first looks for local causes, and in nine times out of ten finds them. I confess the medical gentlemen who consulted me were country ones. Still they had *gone through the curriculum*; indeed, it has occasionally occurred to me that this proceeding was the only merit they possessed to pass with.

The real complaint against the Irish College is not touched upon by "M.R.C.S.," and I must confess I was astonished to notice the juvenile appearance of most of the candidates, scarcely looking twenty-one, and two or three of these were up for the second time. When the College opened its doors, at the request, I believe, of the British Dental Association, they were only solicited to do so for

gentlemen really in practice before the passing of the Dental Act, and who could not spare time to go through a curriculum, not for young men, who ought not to be eligible for examination without going through the usual preparatory courses of lectures, &c.; and it is quite time the *bonâ fide* practitioner should ask the College now to close their examinations which are provoking an outcry from its own children.

"M.R.C.S." is very bitter against the postal method of cram, and quite right to, and it may comfort him to learn I tried it and did not find it succeed, but it doubtless pays the gentlemen to advertise it.

I am, &c.,

L.D.S.R.C.S. Ireland.

IRISH DIPLOMA QUESTION.

To the Editor of the 'British Journal of Dental Science.'

SIR,—Having read the letter by M.R.C.S. Eng. in your last issue, headed the "Medical Directory v. Dental Register," in which he makes a decided hit at certain gentlemen who are very anxious to coach others, and who having scraped through themselves, *guarantee* success to others and kindly offer to impart such instruction as shall form a solid basis on which to work in after life (I should like to ask if they possess this solid basis themselves). Permit me to say a few words in my own defence, as many may think that I am one of the persons aimed at.

Firstly, I am not ashamed of my alma mater, and the initials of the Faculty of Physicians and Surgeons of Glasgow, of which I am a Dental Licentiate, are F.P.S.G.

Secondly, I have discontinued coaching, though I was the first to introduce "postal tuition," and spent much time and labour in perfecting the system which I think can hardly be called a cram, as I am willing to prove to you by enclosing some of the papers, &c. Of course the questions and references were not entered at Stationers' Hall, and any one who wished to commence coaching had only to copy them, and have to commence with what it took me a great deal of work to compile; my chief reason for discontinuing it was I felt convinced it was time the doors of the Irish College were closed "*sine curriculo*," for the tone of the articles that have been going the rounds of the medical journals is anything but calculated to elevate the Dental profession, one having been shown me by a medical student in the 'Students' Journal,' I felt bound to answer it, and herewith forward the correspondence for your inspection and insertion if so willing.

Thirdly, I am not ashamed of my antecedents, being

able to produce articles of a legitimate apprenticeship, besides certificates of attendance at a recognised medical school.

I am, &c.,

J. J. MUSGRAVE, L.D.S., F.P.S.G.

A FORTUNATE ESCAPE.

To the Editor of the 'British Journal of Dental Science.'

SIR,—On the 29th ult. I was told a gentleman had “swallowed his teeth.” I found his medical man in attendance, and from him learned that during an epileptic seizure the teeth had slipped into the throat. They were found by him in the pharynx and brought to the base of the tongue, when one of the clasps became firmly embedded in the muscles of the right side. I grasped them with the long straight forceps, and fortunately succeeded in detaching and bringing away a full-sized upper alloy plate, with five teeth in front, a clasp on the right bicuspid, another on the left canine, and a few pins at the sides from which teeth had previously broken off.

I am, &c.,

W. F. BRINDLEY, L.D.S.I.

Sheffield; April 4th, 1882.

“THE HÆMORRHAGIC DIATHESIS.”

To the Editor of the 'British Journal of Dental Science.'

SIR,—Having read with some interest Mr. Cullingford's remarks, and having had several obstinate cases, though happily not so severe as his, I wish to record them. After a simple stump extraction I had very great difficulty to arrest the hæmorrhage, and noticed that around several of the adjacent teeth a continuous oozing occurred. Where I find a tendency to this excessive bleeding I never, now, allow a patient to depart without a warning as to taking any form of stimulant, in case hæmorrhage might be aggravated. The following example points to this necessity:—A loose stump was removed very readily and the patient soon left, no untoward symptoms appearing. The next morning the patient was brought to me in a helpless condition through faintness from loss of blood. It appeared that on arrival home she took a little brandy, and lay down to sleep, but awoke with blood running from her mouth. All night this continued, and, as I gathered, whenever faintness occurred brandy was administered. After using various styptics, I succeeded by mixing a small quantity of Argenti Nitras and tannic acid, kneading well into a pellet of lint, and packing it into the socket, and applying pressure by means of a gag. On several occasions I have used this combination with satisfactory results. A friend mentioned to me the beneficial

effects he had found from little pellets of sponge moistened with creasote and firmly compressed into the sockets.

I am, &c., H. WREN OLVER, L.D.S.I.

St. Thomas's Chambers,
High Street, Borough;
March 22nd, 1882.

BABBITT METAL.

To the Editor of the 'British Journal of Dental Science.'

SIR,—Several observations having recently appeared in the Journal respecting the use of Babbitt metal instead of zinc for casts or dies, perhaps you will kindly find room for a few more words on the subject. Many years ago, having seen some notice of this metal (I think in one of the numbers of the Journal), I commenced a series of experiments which led me to the conclusion that a compound of two parts of copper, three of antimony, and twelve of tin gave the best results. You will notice that these proportions are somewhat different from those stated by other writers in the Journal. Of course, I do not mean to assert that they are the best possible. In preparing this metal the copper is first melted in a crucible with about an equal weight of the tin (the copper thus fusing much more readily than by itself); a little more of the tin is then added, next the antimony, and lastly the remainder of the tin by degrees, stirring well during the whole of the time; the metal can then be poured into sand moulds of any convenient form. About a year and a half ago I furnished Mr. T. Fletcher with this formula, and I believe it is given in his work on 'Dental Metallurgy.' The melting point of this metal is lower than that of zinc, and somewhat higher than that of lead, so that counter moulds of this latter can be readily made to it with proper care. I am under the impression that the original Babbitt metal was said to contain a portion of lead, but this addition I found to be injurious. With all due deference to Dr. Haskell, I cannot but think that, notwithstanding the hardness of the compound, he is mistaken in stating that "seldom is a second die required," and the quality of "toughness" is conspicuous by its absence, which is an advantage, for otherwise the die might be liable to suffer some alteration of shape from the stamping. Antimony has the property of causing its alloys to expand on setting, and this expansion counteracts, in great measure, the contraction necessarily undergone by all metals in cooling down after solidification has taken place.

I am, &c.,

HENRY LONG JACOB.

Birkenhead; April 3rd, 1882.

THE AMERICAN, FRENCH, AND SPANISH DENTAL ART
STUDIO.

To the Editor of the 'British Journal of Dental Science.'

SIR,—Kindly permit me through the medium of your Journal to reply to a crowd of European correspondents on the above subject. I opened my studio, in the first instance, in compliance with the desire of some Spanish and French students of the Philadelphia and New York College, who had attended my lectures on mechanical Dentistry, but desired a further practical laboratory instruction under my immediate supervision for a certain agreed "honorarium." The experiment proving satisfactory, each academical session furnishes me a goodly quota of earnest workers, especially the non-English speaking. One of the results of last year's International Medical Congress, judging from my correspondents, is the probable visit of a number of European Dentists during the season. I therefore intend to keep open my studio for instruction in artistic Dentistry throughout the year for such as may desire to achieve the higher branches of Dental art, either in class or individually. I may mention, for the benefit of some who appear to have a vague idea of American mode of life, that good board and residence is obtainable at about six dollars per week, and the usual concomitants of refined civilisation at moderate cost; but I cannot do better than refer your readers to an article in the May number, 1881, "Ramblings about New York and Philadelphia," by Laurence Vanderpant.

I am, &c.,

E. M. FLAGG, D.D.S.

22, West Tenth Street,
New York City.

Obituary.

MASON STILLMAN DEAN, D.D.S.

Extracts from the various American Dental Journals.

"He was found in bed, lying upon his back, with hands laid loosely across his breast, and the bed-covering undisturbed, indicating that he had died without a struggle and probably without awaking from his sleep."

"He is gone! The ripe scholar, the true gentleman, the wise counsellor, the generous friend."

"As a man he was possessed of a keen sense of justice, and was strictly upright in all his dealings. Dignified and

self-respecting; kind and considerate to others; intelligent, accomplished, and genial in his intercourse, he won the affection and held the confidence of all who knew him. Dying he has left probably not one to cherish an unkind remembrance of him."

"Few have gone so peacefully, and fewer still have left behind pleasanter memories or a better name."

"Retiring and modest in his disposition, he yet won for himself hosts of friends wherever he was well known."

"He was an assiduous student, a ripe scholar, a skilful though unostentatious practitioner, and a most genial and warm-hearted companion."

"In the life of our friend we may read the history of a lofty ambition, never prostituted to selfish ends, but pursued for the advancement of his chosen profession and the benefit of his fellow-men."

"He had received from his profession all the honours it was in its power to bestow upon him, having been president of the national, state, and city societies of Dentists. In his daily intercourse with men he was the soul of integrity, and possessed of a keen sense of justice and most affable manners, he was universally esteemed."

"We owe this tribute to his memory—That he dignified and ennobled the profession of his choice."

"It almost seems that some people can't die, while others have only to lie down and quietly sleep themselves away from time to eternity. When death comes crowned as the King of Terrors, all tremble at his approach; but when he steps tip-toe, and whispers in still small voice, inviting to rest in his embracing arms, death seems scarcely death; but our friends are taken all the same."

"Our friend was possessed of rare qualities of heart and mind. His nature was gentle, loving and sensitive; but he was as firm as a rock, where principle was concerned."

"We must mourn, and while we strive to express our sorrow, any words we may utter can be but a feeble expression of what we feel; yet in our hearts he will have a monument which shall endure as long as memory shall last, and the example of his pure life and lofty devotion to all that was most worthy will ever be an incentive to us to follow the path in which he so bravely led the way."

"As a practitioner he was conscientious to the last degree, and was thoroughly familiar with the theory of his profession, while as a diligent student his labour was chiefly directed toward original investigation, the results of which have aided materially in the unfolding of truths heretofore imperfectly seen."

MONTHLY REPORT OF CASES TREATED AT THE
DENTAL HOSPITAL OF LONDON,
FROM MARCH 1ST TO MARCH 31ST, 1882.

Extractions	{ Children under 14	470
	{ Adults	775
	{ Under Nitrous Oxide	340
Gold Stoppings.....		240
White Foil ditto		9
Plastic ditto.....		587
Irregularities of the Teeth treated mechanically.....		130
Miscellaneous Cases.....		409
Advice Cases.....		170
Total.....		3130

WILLIAM HERN,
House Surgeon.

MONTHLY REPORT OF CASES TREATED AT THE
NATIONAL DENTAL HOSPITAL,
FROM MARCH 1ST TO MARCH 31ST, 1882.

Number of Patients attended	1625
Extractions { Children under 14.....	414
{ Adults.....	701
{ Under Nitrous Oxide	88
Gold Stoppings	90
Sheets of Gold used, independent of Pellets.....	82
Other Stoppings	392
Advice and Scaling	64
Irregularities of the Teeth	55
Miscellaneous.....	280
Total	2084

FRED. WM. BATE,
House Surgeon pro tem.

QUARTERLY REPORT OF CASES TREATED AT THE
DENTAL HOSPITAL OF EXETER,
FROM JANUARY 1ST TO MARCH 31ST, 1882.

Extractions	{ Children under 14.....	322
	{ Adults	641
	{ Under Nitrous Oxide and Ether.....	25
Stoppings	{ With Gold	23
	{ „ White Foil	15
	{ „ Plastic Material	200
Miscellaneous (Irregularities of the Teeth, Scaling, &c.).....		194
Total.....		1420

HENRY B. MASON,
Hon. Sec.

To Correspondents.

1. Communications intended for insertion in the ensuing number must be forwarded to the Editor, at the Office, 11, New Burlington Street, London, W. by the 8th and 23rd of the month, and must be duly authenticated by the name and address of the writer.
2. We cannot undertake to return communications unless the necessary postage stamps are forwarded.
3. It is earnestly requested of our correspondents that their communications be written on one side of the sheet only; and we also beg to call particular attention to the importance of a carefully-penned signature and address.
4. All communications relative to subscriptions and advertisements are to be addressed to the Publishers, Messrs. J. and A. Churchill, 11, New Burlington Street, London, W.
5. The Journal will be supplied direct from the office on PREPAYMENT of subscriptions as under:

Twelve Months (post free) 14s. 0d.

Post-office Orders to be made payable at the Regent Street Office, to J. and A. Churchill, 11, New Burlington Street, W. A single number sent on receipt of seven (penny) stamps.

ANSWERS TO CORRESPONDENTS.

W. M. FISHER.—Thanks for information, which is certainly important.

R. B. BOULTON.—Thanks for book. It is fortunate for those who can be content with small mercies.

Communications have been received from Messrs. J. Smith, T. Fletcher, R. B. Boulton, "L.D.S.R.C.S. Ireland," F. Hall, Lemale and Co., A. Coleman, E. M. Flagg, F. Bate, J. J. Musgrave, H. B. Mason, B. T. Hutchinson (Natal), "M.R.C.S.," G. Ward, W. F. Brindley, Dental Hospital of London, and Dental Students' Society.

BOOKS AND PAPERS RECEIVED.

- 'Dental Record.'
- 'Le Progrès Dentaire.'
- 'Annual Report of Dental Hospital, Exeter.'
- 'Transactions of the Odonto-Chirurgical Society.'
- 'Progrès L'Odontologie.'
- 'Glasgow Medical Journal.'
- 'Lancet.'
- 'Medical Times and Gazette.'
- 'British Medical Journal.'
- 'Pharmaceutical Journal.'
- 'Students' Journal and Hospital Gazette.'
- 'The Cape Times.'

NOTICE.—We desire that it may be clearly understood that our pages are open to all for free expression of their views on matters connected with our profession. We only ask for terseness of expression and MODERATION IN TONE.

When otherwise unobjectionable, difference of political or other opinion will never be regarded by the Editor as a disqualification for the admission of any communication to the pages of the **BRITISH JOURNAL OF DENTAL SCIENCE.**

British Journal of Dental Science.

No. 343.

LONDON, MAY 1, 1882.

VOL. XXV.

SARCOMATOUS GROWTH IN THE UPPER JAW: REMOVAL AND CURE.*

By JOHN S. AMOORE, L.D.S. Eng.,

LATE HOUSE SURGEON TO THE NATIONAL DENTAL HOSPITAL, LONDON.

J. D—, an anæmic-looking girl, aged 16, came under treatment at the National Dental Hospital, October 24th, 1881, on account of a swelling which had appeared on the outer side of the alveolus opposite the first upper right molar. The swelling at the time was about the size of a filbert, of a dark colour, very vascular, bleeding readily when injured. It was pedunculated, the point of attachment being, as stated above, on the gum over the first molar.

The history was this:—The tooth had given some little pain, and for some months previously there had been “gum-boils” constantly forming and discharging in its immediate vicinity; about three weeks or a month previous to the above date the patient first noticed a slight swelling, which in a week’s time had grown considerably, and showed a great tendency to bleed when touched. Then followed two rather severe hæmorrhages, the second lasting for three or four hours. On account of this the patient sought advice of a general, and also a Dental, practitioner, and was recommended to the Dental Hospital.

As the tumour had somewhat the appearance of an en-

* Under the care of F. H. Weiss, L.D.S. Eng., and T. Gaddes, L.D.S. Eng., L.D.S. Ed., at National Dental Hospital, London.

larged abscess an incision was made, but blood only apparently escaped. Nothing further was done that day, but the next morning the patient was placed under nitrous oxide, the tooth was extracted, and the growth excised. It was intended to remove the outer plate of alveolus, but time did not permit, and it was thought prudent to take no further steps at present. On the following Friday (October 27th) the patient returned to the hospital; the growth had recurred, and now filled up the space between the bicusps and second molar; it was attached by a broad base, and chiefly confined to the outer border of the alveolus. There had been three slight hæmorrhages, but in the longest instance the bleeding did not last more than twenty minutes. Nothing was done that day, and the case deferred till Monday; in the meantime a letter was sent to the doctor who had previously seen her, requesting him to prescribe some iron tonics to improve her anæmic condition.

October 31st.—The mass had grown and the hæmorrhages had been frequent; it still appeared to be confined in its point of attachment to the periosteum on the buccal side of the alveolus; the breath had the unpleasant odour common after the extraction of a tooth. She was directed to rub tannic acid upon the growth with a view partly of stopping the bleeding, and also to harden the surface; she was also given a disinfectant mouth-wash (Permang. Pot.).

November 4th.—The patient was placed under the influence of a mixture of nitrous oxide and ether, and then with the aid of a pair of bone forceps and a knife a considerable portion of the external plate of the alveolus was removed with the growth attached. On microscopic examination the tumour was seen to consist almost entirely of embryonic tissue, the round cells, and some slight amount of fibrous tissue. On the following day there were some large granulations in the centre of the wound, which were cauterised with strong nitric acid. Two days after, the tumour appeared to be recurring, but the progress it made was comparatively slow. This was again cauterised.

8th.—The growth had increased, and though small was unmistakable; it was again cauterised with nitric acid. The

patient's general health had greatly improved, though at times she suffered considerable pain.

11th.—Growth slightly increased; applied caustic potash (fused), and gave a mouth-wash of aromatic sulphuric acid, five or six drops to a tumblerful.

18th.—Growth larger; especially painful at night.

21st.—Patient again put under "gas" and ether, the growth excised, and with some curved gouges the alveolus was very freely cut away till the buccal sockets were completely removed. The patient was allowed to recover and rinse the mouth with cold water, and the wound was then touched with nitric acid. There was but slight hæmorrhage, and the patient rapidly recovered the usually unpleasant effects of the ether. There was no nausea.

22nd.—The wound presented a healthy appearance; there was no sign of any recurrence, but the patient complained of pain in the molar behind. Some relief was obtained by placing some tincture of opium on wool in the socket, and some of the tincture was given to the patient with directions to use about fifteen drops to a wine-glassful of warm water, to be held in the mouth (but not swallowed), or, if the pain was very severe, to put some on wool in the socket, as mentioned above.

27th.—The pain was still severe at times, and there was occasional hæmorrhage; the granulations were cauterised with nitric acid.

December 2nd.—Small granulations springing from outer extreme edge of alveolus; applied caustic potash (with an acid mouth-wash).

9th.—Repeated the above; general aspect of things somewhat better.

This treatment was continued at longer intervals, a steady improvement being now maintained. In March the mouth presented a healthy appearance, the reparation being so complete as to give no indication of the amount of bone removed.

SIMPLE OPERATIONS.*

By H. C. QUINBY, Liverpool, England.

IF one were to judge of what our profession is doing by its current literature, he would say that nothing but grand operations are ever attempted now-a-days, and while I would not have it supposed that I do not fully appreciate such operations as I see described, I wish to protest against what seems to me a growing tendency to make our work as complicated and laborious as we can, requiring not only the utmost exercise of skill, but, from the nature of the operations, a degree of physical power that, if in constant demand, would be a greater tax upon our endurance than the strongest of us could stand. Try as we may, we cannot quite convince ourselves that our patients are insensible blocks of wood, and, while brain and muscle are labouring to execute the operation in hand, we are often called on to exert all the will-power we possess to control the timid and nervous patient who wants our services, yet dreads the ordeal.

We all of us have cases where the earnest desire of patients to have the best work that can be done for them is sufficient to induce them to put forth all their own powers of self-control to endure unflinchingly what we require of them and give us intelligent and appreciative aid in our efforts. In such cases let us, for our own sakes, try what skill we have, remembering always, however, that it is our duty to consider whether the more complicated operation is really better for the patient as well as for ourselves. But we all know, too, that, as a rule, those who want our services most are the weak, the delicate, the nervous; that in fact the more pressing the demand for our services the greater is the amount of suffering the patient must be called upon to endure; and yet the power of endurance is weakened by the same cause that has made our services necessary; in other words, teeth decay most rapidly when people are weak and ill; therefore our services are

* Read before the New York Odontological Society.

often most urgently needed when the strength of the patient is at low ebb, and it is in these cases that simple operations are not only more bearable but more effective and more lasting.

There was a case most admirably described in the 'Dental Cosmos' a short time since, where the whole or the greater part of a central incisor needed restoration, and I am sure the operation when completed must have been most satisfactory to both operator and patient, but let us see what both have to do and to suffer. We prepare the root, get a porcelain crown satisfactorily fitted, and then proceed to build up with gold the lingual surface of the tooth to its original form. We shall probably put our patient into a chair that will allow us to raise the seat and then depress the back, so that the patient will be in a reclining and nearly horizontal position, three feet or more above the floor, in fact, as nearly as possible as though lying on a surgeon's operating table; then we proceed to fix a sheet of rubber dam, having cut away the gum freely so as to get the rubber well up on the root; perhaps an automatic saliva-ejector is then set in operation and its syphon hung to the patient's mouth; we next adjust our battery and see that the electro-magnetic mallet is in working order, and then after placing two or three small screws to hold the gold, we proceed leisurely and carefully, as we must, of course, to hammer away at this poor dead root until we build up a beautifully-formed lingual surface of gold against our porcelain front. We have here a work of art, costly, of course, as art must be, but if the patient has been a nervous one, the cost cannot be stated in sterling coin. The patient pays a part of the cost in nervous dread of the Dentist's chair, perhaps, to the extent of neglecting the periodical examination that, by revealing the approach of danger, might avert it; the operator pays in the physical exhaustion that must follow a protracted operation, and when all this is done, let me ask, how much better is it for the patient than a tooth with a gold backing soldered to the pins, and to a plate covering the surface of the root, and having a wire fitting the enlarged and straightened pulp-canal in the old-

fashioned way? Is it better in durability, in usefulness, in comfort, or in external appearance?

I doubt it. If some simple yet essential points in the fitting are carefully observed, thus: Let the wire be as long and as strong as the root will permit, and if it does not fit tightly rag it with a strong knife and wind it evenly and smoothly with fine floss silk until it does fit tightly. If there is not already a well-shaped cavity in the cervical end of the root, make one with an inverted cone-shaped bur. Now warm the tooth, and place round the wire where it is soldered to the plate a sufficient quantity of rather soft gutta-percha stopping to make a perfect filling in the cavity, dry the root carefully, and put in it a little stiff sandarac varnish in such a position that when the wire is pushed up it will carry the varnish along with it to act as a cement; then warm the tooth enough to make the gutta percha soft, and with a piece of wood notched at the end so as to guide the tooth as you wish, press it firmly up to its place. Any surplus gutta percha will be pressed out and can be smoothed off with a warm burnisher. I believe a tooth fitted in this manner will last longer than one fitted in the other way, and, as will be seen, there is no part of the operation that will keep the patient in a constrained position for ten minutes at a time.

The treatment is available for any of the incisors, canines, or bicuspid, upper or lower. If one cusp only of a bicuspid is wanted, fit it so that you can fill in between the natural and artificial cusps with amalgam, finishing all down smoothly after the amalgam sets. Such operations are, it is true, more satisfactory than showy, but I doubt if we are justified in making a patient's mouth a show-case for our skill, and I hope I shall never think as one of our profession may be supposed to have thought when, a few years ago, he remarked to me that, "as his patients liked to see the value of their money, he made a point of cutting away a tooth, when preparing for a filling, so as to show the gold as much as possible."

In a former paper I alluded to the advantage of learning to operate by reflection; that is, to use the mirror in pre-

paring and filling all approximal cavities in upper teeth, and many in the lower. A mirror with a flat, thin handle, and a ball-and-socket joint in the shank, may be so held between the second and third fingers of the left hand as to leave all the fingers at liberty to hold a napkin in position, to hold the lips back, and, if necessary, to hold a second instrument to keep a piece of gold in position while you are packing it with the right hand. You may prepare your cavities without any wedging of the teeth apart, which I believe to be both unjustifiable and cruel; you need not cut away the labial surface of a tooth, but may fill it from the back when the tooth is so much decayed that you can see the gold through the labial wall of the cavity doing all your work with the patient sitting in a comfortable, upright position. Indeed, unless you are operating for a small child, you need never alter the position of the seat of your chair from one week's end to another, your back will not be broken by stooping, and when your work is finished there will be little if any absolutely exposed gold to be seen from the front; and what you have cut away at the back leaves the surfaces so shaped that they are easily cleaned, and therefore easily preserved from renewed decay.

I just alluded to the practice of wedging as cruel, and I will add to that by saying that I believe it has done nearly, if not quite, as much mischief as the indiscriminate use of arsenic to "deaden sensibility," when it was so constantly practised thirty years ago. The teeth are wedged apart, and while they are sore and painful to touch, while, in fact, the socket is so altered in shape that concussion can be felt directly upon the apex of the root, a lot of gold is hammered into a tooth, and if the nerve is not severed where it enters the apical foramen, it is so battered and bruised that it will probably die; then, when all is done, the teeth are allowed to come back to their original position with a beautiful "contour filling" in them; and as, at the best, a filling can only make a tooth as good as it was before it decayed at all, why if we have been careful to restore the surfaces to their original shape, should they not decay again? Another objection to this method of treatment is one that all of us too

frequently fail to see, and that is the suffering of the patient. How many have been driven to despair of their teeth because they literally could not bear the torture of having teeth filled in this way; and thus the effort to save has been the cause of further loss.

And this leads me to another point, and makes me wish that I had a more persuasive pen that I might induce a greater proportion of the members of our profession to think twice ere they treat all their cases alike with gold fillings. I am constantly meeting with cases where the teeth of children and youths of both sexes are filled with gold before they are past the constitutional changes of puberty; and I think this too is both cruel and inexpedient. The mucous secretion at this time is extremely acid, as it is with child-bearing women, and as it is from many other constitutional causes at any period of life; but where it is so, where we find this secretion viscous—ropy may be a better word to describe it—we shall also find the teeth very sensitive, an unmistakable indication that decay is making rapid progress; and I do not believe that gold fillings put in at such a time will be a credit to any man, to say nothing of the increased pain to the patient. When a tooth is in this super-sensitive state, the Dentist has nothing like a fair chance to do thorough work; and if he does succeed in making his work satisfactory to himself, I do not believe it will be as safe or anything like as comfortable as a gutta-percha filling would be. I think these cases should always be treated with gutta-percha until the secretions are in a normal state, and then we may be able to do gold work with some credit to ourselves and satisfaction to our patients; for the temporary stopping having checked the ravages of decay will have consequently reduced the sensibility so much that the operation will be bearable.

No one will deny, I think, that gutta percha makes a good and durable filling where it is not exposed to much wear. If this is the case, why not protect it so that it will do in a grinding-surface cavity? It is easy to do this. We can swage a piece of thin gold plate so that it will correspond somewhat to the shape of the grinding surface of a molar

tooth, cut it slightly smaller than the cavity, solder a loop or stud to the inner surface of the plate, then fill the cavity with gutta percha, and warming the plate, press it into the filling until we get it in the right position, and we will have all the advantage of a gutta-percha filling with a surface that will not wear out. These plates can be made by the quantity, and of all sizes, so as not to take much of the operator's time in fitting, and any one can see what I know from practical experience, that most excellent fillings, in every respect that make a filling desirable, can be made in this way.

There is another use of gutta percha to which I wish to call attention, although it has recently been mentioned by others, and that is as a lining for the cervical walls of cavities, more especially such as extend beyond the margin of the gum. Whether the filling is to be of gold or of any of the plastic preparations, it is an excellent precaution to lay a foundation of gutta percha.

Dr. Kingsley, to whom we are indebted for one of the most valuable contributions our literature has ever received, has recently suggested to the society the use of amalgam for lining the cervical margins of such cavities as I have just described. I may say that I tried this some years ago, and although I think it is better than filling such cavities entirely with gold, I do not think it is as good as gutta percha for this purpose.

Sometimes, with all our care, a gold filling in a lower back tooth, or even a large approximal filling in an upper molar, will get wet just as we are completing it. Is our labour to be thrown away in such a case? I say no. A small globule of mercury taken up on a gold-foil cylinder and applied to the surface, packed down first with a serrated plugger, and then with a burnisher, will so amalgamate all the particles of wetted gold that the surface of that filling will be as hard as it could be made if kept perfectly dry.

Of course, the usefulness of the filling depends on how it is packed in the earlier stages of the work, and only the surface of the filling is discolored with the mercury.

With gutta percha and amalgam we may often build up

a useful crown upon the otherwise useless roots of a broken-down molar, which it might take hours of hard labour to build up with gold. I will endeavour, as concisely as possible, to explain my method of doing this. Supposing the roots to be in a healthy condition, we will insert short pieces of wire loosely in the pulp-canals of two of the roots, with the ends projecting; then take a good impression of the root, the wires coming away with the impression; if there are fragments of the crown remaining, so much the better, as they will be serviceable. When the plaster cast is made, we ought to be able to see the exact position and judge of the direction of the canals, and into each of the two we drill a small hole about a tenth of an inch deep, the holes being naturally a little divergent. We will now make a ring of thin gold plate, shaping it, if one likes to take the trouble, to the form of the tooth we are replacing, but fitting it outside any remaining fragments of the crown; then to the inside of this ring we solder two strips of gold plate, with the ends bent at such an angle and of such length that they will cover the holes in the roots; drill these at points corresponding to the holes, and insert pins in the right direction, so that when sprung into place they will hold the ring in position. It is best, also, to solder two or three studs to the inside of the ring to assist in retaining the filling. We will now make such retaining points as we can in the natural root, spring the ring into its place with the pins in the divergent canals, adjust the articulation, and then pack gutta percha over the whole surface of the root, half filling the ring with that preparation and finishing with amalgam. I have made some very serviceable teeth in this way, and, as will be seen, nearly all the work is done in the laboratory, saving both patient and operator a great deal of time and trouble.

Fortunately for our patients as well as for ourselves, there are many teeth that can be surely saved by gold fillings, and on these let us by all means exercise all our skill; but a Dentist should first exercise the common sense with which he is endowed, and be sure that his case is a suitable one for present treatment with gold before he wears out his own strength and his patient's endurance in trying to do a grand

operation. In a word, let us avoid what seems to be a growing error among us, the idea that the making of gold fillings is the whole science of Dentistry.

Dr. C. E. FRANCIS.—I believe Dr. Quinby to be a careful observer and a thoroughly practical man. He evidently belongs to the eclectic wing of our fraternity, and his paper makes suggestions which are worthy of consideration. Many Dental as well as surgical operations are undoubtedly rendered needlessly severe, and patients are not infrequently compelled to suffer much pain that might, with proper skill and care, be spared. In our operations upon the teeth it is well to bear in mind that our patients' heads are not made of stone or wood. We all know that many people have suffered such a degree of pain and fatigue from severe Dental operations, that they dread ever afterwards a similar experience, and consequently keep away from the Dentist and suffer their teeth to go to destruction. Many huge gold fillings that have cost the Dentist hours of back-breaking and anxious toil, and the patient not only a commensurate or what might be deemed an "exorbitant" fee for the labour and skill required, but a severe and most fatiguing tax upon muscles and nerves from which it has required days or weeks to fully recover, have given out within a year or two from the time they were inserted. And such failures are not always the result of careless or defective operations, by no means, for some of the finest fillings ever inserted have given out. Too much strain upon a large contour filling in its after-use may cause its surrounding walls to break away; and on the principle that "like causes produces like results," caries may again attack a filled tooth at a vulnerable point, dissolve out its lime-salts, leave the filling without support, and the entire crown a complete wreck. In many cases well-impacted stoppings of prepared gutta percha will serve a better purpose than any other material in use for preserving teeth from further decay, simply from its more perfect adaptability to the calcareous walls against which it is packed. The buccal surfaces of second and third molars which are not much exposed to attrition are safest when treated in this manner, although these stoppings in time need renewing. Cappings

of gold, such as Dr. Quinby refers to, often prove very useful by preventing the softer material beneath from wearing away. The doctor also wisely suggests that rapidly-decaying teeth, and the teeth of young people in particular, be temporarily filled with gutta-percha stoppings and kept in good repair until more favorable conditions appear for inserting gold fillings. In regard to the use of a mouth mirror its value to those who use it is simply incalculable. As regards wedging there is little doubt that many teeth have been seriously injured by severe wedging, and by subsequent harsh treatment while exceedingly sore to the touch. Strangulation and loss of vitality to pulps, with periodontitis and alveolar abscess, are results of such overdone operations, and who has not seen them?

Dr. ALLEN.—I believe eclecticism is the best kind of practice for the Dentist. He should be able to practise in all methods, for he has all sorts of patients and all sorts of constitutions to work upon. Our operations all vary in some, if not in all, particulars, and we must defer many times to our patients' whims, as well as to their constitutional ability to bear the necessary operations. There are patients, also, who are willing to bear, and sometimes insist upon, suffering more than we think necessary. I had such a patient yesterday morning; her upper front teeth had all been filled nearly or quite round them near the gum; the right lateral, however, had gutta percha in the lingual side, and the idea that it was not gold troubled her so much that she insisted I should take out the soft plug and replace it with gold. As the filling seemed good and was preserving the tooth, which seemed to be quite frail, I advised her to let it remain; but she wanted her own way, and I consented to do as she wished. On removal of the gutta percha I found the tooth in better condition than I expected. I filled the tooth with gold, and perhaps it is in better condition to last long than it was before; but that is a case where I would have allowed the soft filling to remain, because she is a patient who has her teeth examined frequently, and because I think there is sometimes much unnecessary pain and annoyance caused by these long gold operations.

Dr. WILLIAMS.—There are several points worthy of remark in this paper. I know of a case that resulted fatally from heroic treatment. An eminent professional man, thinking that the shortness of his upper front teeth interfered with his speech, went to a neighbouring Dentist, who talked loudly of his ability to weld gold. The Dentist was a man of no education, who had simply learned to weld gold. The patient sat from four to six hours a day for five consecutive days, having his teeth beaten with heavy mallets. At the end of the five days the patient had a stroke of paralysis. If the patient's power of will had been tempered by a little medical knowledge, or if the operator had been more intelligent, it might have been known that jarring the peripheral membranes of the brain either with one hard blow, or by continuous, almost uninterrupted, irritation with lighter strokes, would amount to the same thing and produce paralysis. The patient lingered about two years and died of general paralysis. When a pupil I was taught to use magnifying lenses, as the watchmaker does, and I find it very convenient to have one mounted on a thimble, with two universal joints about half an inch apart. It can be held on the thumb or a finger of the left hand, with the glass over the operation. The idea, in some form, has been practised by engravers for generations. My old preceptor used to say, "In working on small things look through a lens, as one would use a microscope for investigating minute objects." In regard to preparatory treatment of delicate teeth, my attention was first drawn to that subject soon after I began to study. The original Hill's stopping, then coming into use, was said to be made with gutta percha and plaster of Paris, and in a short time it became soft on the surface; my teacher, Dr. Keep, suggested making it with gutta percha and oxide of tin. That we used in teeth that were too useful to be thrown away, but not strong enough to be filled with gold in the old way. I found that the substance of the teeth became hardened under that temporary filling, and the idea entered my mind that a plan or system of preparatory treatment could be formed for the purpose of arresting decay and hardening the dentine, and allowing or encourag-

ing a deposit of secondary dentine. I elaborated the idea and became well satisfied with my theory and practised it on my own responsibility, although sometimes hearing from other operators that gold was the only thing that should be used. The oxide of tin, however, would discolour the teeth sometimes, and it occurred to me that oxide of zinc might not; that I tried and found it to work well, and have used it ever since. I had supposed that I was the first to think that a tooth could be hardened by preparatory treatment, but after a few years one or two patients came to me from the late Dr. Bemis (then retired) with large fillings of tin foil in some of their teeth. In answer to inquiry, they said he put them in with the remark that, perhaps, after a while the teeth might be filled with gold. About two years ago, on meeting Dr. Bemis, I asked him if he had any reason for using tin. He replied that he had found (to use his own words) "the rust of the tin to have a hardening effect on the bone of the teeth." He had noticed it as a farmer would observe the weather, without understanding the science of it. Dr. Bemis died recently at the age of ninety-two years, at Bemis Station in the White Mountains. He was a close observer and a careful operator. I am satisfied that the oxide of tin, from oxidation of tin foil in a tooth, also as an oxide combined with gutta percha, has a corrective effect in certain stages of decay of the teeth, hardening the teeth more, perhaps, than oxide of zinc, though I think the latter has a somewhat similar effect. To take the place of the hardening effect of oxide of tin, I saturate soft cavities with such applications as the different cavities seem to indicate; such as antacids, antiseptics, and sometimes astringents, &c., before sealing up the cavities, which it is very important should be *kept* under conservative influences by unstopping and resaturating and restopping them at intervals varying according to their conditions. This plan of treatment seems to me more rational and safer in its results than the immediate obtunding of sensibility, only to enable one to get a gold filling in at once, which often is like putting nature to sleep while you are choking her; it does not give her time to get the tooth in a condition to bear a solid metal filling.

If you attempt to obstruct nature she will rebel, but by aiding her much good may be accomplished. I think that comprehends in the main the proper principles of preparatory treatment of delicate teeth, and I have practised on them for over thirty years. I was sorry to hear the other day an assertion by a teacher in a Dental school that there is no way of checking decay of a tooth in any stage but by complete excavation. He certainly should have known better.

Dr. RICH.—The paper by Dr. Quinby contains many valuable suggestions and some erroneous ones. I suppose every Dentist who wishes to be of the greatest possible use to his patients resorts to eclectic practice. But in cases where gold can be used to save the teeth it ought to be used in preference to any other substance. Dr. Quinby suggests some methods of using combinations of gutta percha and gold or amalgam; I have seen some very successful and durable fillings where the substructure was constructed of gutta percha protected from wear by a superstructure of gold or amalgam; properly prepared, gutta percha is one of the most valuable substances that we have to aid us in preserving the teeth. As a temporary filling, and where there is great sensitiveness of the dentine, and where we have reason to suppose that a filling constructed entirely of gold, which is an active conductor of caloric, would destroy the vitality of the tooth, it becomes a very valuable adjunct. I think Dr. Quinby is wrong in the matter of his criticisms on the contributions of Dentists to the current literature of our profession. It is but natural for them to report the remarkable cases that occur in their practice; it is hardly to be supposed that they would report any but extraordinary cases. In fact, it would not be a matter of interest to the profession to have ordinary cases reported; and on that account I differ with Dr. Quinby when he supposes that most practitioners are striving to perform all the difficult operations they can to the neglect of the more simple ones. As regards his remarks upon the subject of working upon the teeth when they are sore and inflamed from the action of the wedge, I do not suppose that any one

would do that, and it would be hard for me to believe that any respectable Dentist would do anything so improper; and if there are persons practising our profession who are so unprincipled or ignorant as to do such things, they must be rare exceptions to the high grade of professional integrity which generally characterises the members of our profession, at least in the United States. The use of the mirror while working in the mouth is a most wise suggestion. I think upon the whole the paper is a valuable contribution to the literature of our profession. As regards the statements made by Dr. Quinby in relation to contour fillings, he is certainly not correct, and I do not think he understands the object of constructing contour fillings. But I like the spirit and honesty of purpose that pervades the whole paper, and the earnestness with which he urges upon the profession the adoption and practice of which he considers correct principles; in this particular it ought to be highly commended. I should like to ask of those present who have used lenses in the mouth, what, in their opinion, is the best method of preventing the condensation of moisture upon the surfaces of lenses and mirrors when they are being used, that is better than the well-known one of warming them up to the temperature of the mouth? And while we are upon the subject of the prevention of condensation on mirrors and lenses, I will state a method I adopt when I wish to examine the teeth critically. I apply the rubber dam to the teeth I wish to examine, and make them perfectly dry; the result is very satisfactory. As nobody suggests anything better than warming the mirror or lens, I will state that if a film of pure glycerine is spread over the surface of the mirror, the moisture will not condense upon it.

Dr. DWINELLE.—I have magnifying mirrors and lenses upon my table constantly, which I use more or less in performing delicate and difficult operations. I have no trouble in regard to moisture gathering upon the mirror or lens, for I always have a lighted lamp on my table, and it is quite sufficient to brush the mirror across that once or twice, being careful not to make it too hot so as to destroy

it by volatilising the mercury on its back. Sometimes operators dip their mirrors in hot water to prevent condensation of moisture upon them; this, too, has to be carefully done, or the water will penetrate and impair the backing of the mirror. By the way, speaking of Dental mirrors, I do not know that it is known to the profession generally—we like to get credit for everything that belongs to us—that the entire system of mirrors, concave and plain, as adopted by the laryngoscopists, was derived from our profession. They saw their uses in our profession and wisely adopted them in their own. I have often heard them say that for this they owed us a debt they never could pay. Dr. Ch. Fauvel, a distinguished laryngoscopist, of Paris, was one who cheerfully acknowledged his obligations to our profession for the mirrors so indispensable to his own. He once invited me to witness the operation of removing two tumours from the vocal cords; truly a beautiful operation, one requiring the highest degree of skill, dexterity, and steadiness of nerve. For weeks previous to the operation he had his patient come to him daily, to have him manipulate his throat with instruments in imitation of the operation to be performed, to familiarise the velum, throat, and vocal cords with contact with foreign substances, so as to prevent the disposition to gag, thus closing the avenue to the point of attack. This was kept up until all of the parts could be freely manipulated without causing the slightest irritation or contraction of the tissues involved. A ball of intense light from a gas-burner was thrown into the mouth, and thence was reflected down the throat by mirrors corresponding with those familiar with us, while at the same time they brought the tumours on the vocal cords in complete view. With long, delicate, curved, cutting forceps, skilfully directed, they were entirely and successfully removed. This operation could not have been performed but for our mirrors. I made up my mind then and there that I never would shrink from any Dental operation after that. No matter how obscure the cavity, how far remote within the mouth, no matter how deeply it was seated, or how difficult it was to approach, or what time or patience it might require, I would remember

Fauvel, and use the mirrors as he used them, and exercise the patience, faith, expectation and skill, if possible, that he did. If he could go down into a man's throat almost to the bifurcation of the bronchial tubes, and successfully operate with intelligence, perception and precision, I never would shrink from anything that presented itself to me in my profession. I think the inspiration he gave me has been of great importance in stimulating me to perform operations that I never expected to perform, and to succeed when success seemed almost impossible.

Dr. WILLIAMS.—Slightly concave mirrors should be in general use. There is a little delicacy in using a mirror by some who imagine it will be thought they need some assistance for their eyes. That is a false idea, for the patient should be instructed that fine things should be looked at through a lens. Most of the mirrors have two short a focus. They are too concave.

Dr. LORD.—In regard to keeping the mirror or lens in a condition that it will not be blurred by the breath, I keep them in my pocket, either vest or pants. The warmth of the body is quite sufficient.

Dr. BROCKWAY.—I have heard of a unique way of warming a mouth mirror practised by a gentleman of our profession. He places it on his own tongue. I remember seeing the method of holding a magnifying glass practised by Dr. Flagg, which was a little peculiar. He holds his magnifier in his mouth by means of a suitably bent handle. He has become so familiar with its use as to use it with great dexterity and advantage, I suppose. I noticed in Dr. Quinby's paper one passage that seems to me deserving of a little attention, and, if I understand it rightly, of adverse criticism, though in the main I am very much pleased with his paper. It seems to me Dr. Quinby quite misapprehends the purposes of wedging teeth. In most cases it is for the purpose of getting sufficient room to make a contour filling. If I understand the object of a contour filling it is that when a tooth comes back the original conditions are not restored, but are quite changed. If the original condition, as well as the original shape, were

restored, of course our operations would have very little purpose or value. But if the conditions are changed, as they must be by restoring the contour with imperishable material, then it seems to me we are justified in a proper amount of wedging in order to secure those improved conditions.

Dr. RICH.—Dr. Quinby is undoubtedly mistaken, for the original conditions are not restored. The whole object is to produce the most favorable condition of the tooth, not only for its preservation, but for the comfort of the patient, and of course where two gold surfaces are brought in contact there is no possibility of the conditions being the same as they were before the parts were affected by caries. It would appear from the remarks that are made by Dr. Quinby on this subject that he does not understand what the contour fillings are constructed for. While I am up, let me say I had a case in my practice to-day that is a good illustration of the advantages of my mode of using nitrous oxide when working upon sensitive dentine. The patient was a lady of very decided will, and altogether a very irritable and disagreeable person to deal with when anything goes wrong with her, and to-day things did go wrong, for she came to me to have a tooth filled, and it proved to be very sensitive. At the first indication of pain she stopped me and she would not have anything more done to it if it was going to hurt in that way. I then proposed to use some nitrous oxide; she consented, and in doing so declared she would not suffer pain, but would rather lose the tooth; but if I could fill it without her being obliged to suffer as she had done, she did not care what I used. I gave her some nitrous oxide, and the cavity was excavated without any trouble, and she did not make the least movement while I was doing it, but when I had finished forming the cavity and told her so, she remarked in reply, "Well, that is what I call fun!"

The PRESIDENT.—How much did you give her?

Dr. RICH.—I only filled the bag once, and it holds about four gallons. The cavity was a large one in the distal surface of the right superior second bicuspid, extending

under the gum. She took three inhalations the first time, which took all the pain away; when the pain returned she took two more inhalations, and I was able to cut away the bone as rapidly as I wished. When I was about half done she asked for more, and I gave her the second dose, and before I completed the excavating I gave her two doses more of two inhalations each. It is not necessary to make the patient unconscious. This is one of the cases that are occurring in my practice all the time, and to my patients they are very satisfactory experiences. The gas is inhaled through the mouth, I apply the rubber dam before I give the nitrous oxide, and I can always arrange it so that it will not be in the way. While I am speaking I will mention a device for preventing the water from flying out of the mouth when the cavity is being syringed out. It may not be new to those present, but I mention it because, although I have used it many years, it was new to one of my Dental friends the other day, and he is not at all a young practitioner. Introduce the point of the syringe tube into or as near the cavity as possible, then direct the patient to close the lips tightly around the tube, and the water may be injected with as much force as you choose to employ, and not a drop will fly out of the mouth.

THE PRESIDENT.—I am sure you will appreciate Dr. Rich's idea of having the lips closed in using the syringe. Many a silk dress, delicate lace, &c., has been injured by the overflowing of the mouth from the hasty or copious injection from the syringe.

DR. LORD.—I generally find Dr. Rich correct, but I cannot appreciate the necessity of the patient closing the mouth when the syringe is used. I always use mouth napkins over the lips and at the corners of the mouth when operating, and even when examining the teeth, and when I use the syringe I keep the napkin to the lower lip, and with my fingers raise the lips somewhat, so that the water does not overflow. In this way the mouth is kept open so that we can see just what we are doing. I consider the syringe one most important and useful appliance of the more modern times. I use it not only to wash out cavities, but for wash-

ing between the teeth and for the mouth generally, rather than have patients take water from a glass. Of course, for the greatest comfort, the water should be tepid, and it is very easy to keep it so for constant use.—*The Dental Cosmos*.

ASPHYXIATED BY A TOOTH.

By N. MILLER, L.D.S.I., Preston.

THE following may not be without interest to many of your readers. A gentleman brought his son (a strong, healthy boy of between ten and eleven years of age) for consultation as to the state of his teeth. Nine of his temporary teeth obstructed the eruption of the permanent ones, this being explained to the father he wished gas administered and the extraction of what was necessary. The boy, not being the least nervous, inhaled gas freely and became unconscious in from fifteen to twenty seconds; seven of the temporary teeth were extracted, the last being a left lower molar; during the latter stage of the operation the gag slipped and the mouth closed. The patient became partly conscious, assumed a natural colour, when he took a deep inspiration, immediately after which he exhibited symptoms of asphyxia, raised his hand to his neck and attempted to tear his garments away, although they were quite loose. Immediately his head was held forward across the knee and some sharp raps given on his back, at the same time he was told to cough as strongly as he could, but it seemed to be of no avail; trial was then made to feel the tooth, but did not succeed. Seeing there was no improvement a medical man was at once telephoned for but must have been out as no answer was received. Then the nearest medical man was sent for, and Dr. Marshall arrived in about seven minutes, who, when he saw the boy, pronounced life to be extinct.

A wish was expressed to the father that he would consent

to the doctor performing tracheotomy, which he readily did. Dr. Marshall made a post-mortem in the presence of myself and deceased's uncle, when he found the left lower molar, with fangs uppermost, firmly fixed in the larynx.

An inquest was held the same evening when the jury came to the unanimous conclusion that the cause of death was purely accidental. The father being asked if he attached any blame to any one, expressed himself perfectly satisfied with the course that had been pursued during the unhappy occurrence.

Thinking it would be better from a practical point of view if all accidents of an alarming nature were recorded in your valuable journal, for the benefit of those who may not have had such unpleasant experience, I send this account in the hope that it may act as a warning.

I cannot but think that amongst so many as there are in our profession many less serious accidents occur, the particulars of which would be interesting and instructive to all, except, perhaps, the parties immediately concerned, and would show in what proportion accidents happen, each teaching its own lesson.

PNEUMONIA FROM A TOOTH.

By Dr. T. R. CHAMBERS, New Jersey.

PNEUMONIA from a tooth in the bronchus of a patient who had had thirteen teeth extracted at one sitting and fainted soon after the use of the nitrous oxide gas was suspended. She was then seized by severe epigastric pain, urgent dyspnoea, cough and nausea. Six days subsequently, while suffering from pneumonia, she coughed up a second molar tooth. The acute symptoms of pneumonia began to subside, and within a month the patient was well. This case should lead to caution by Dentists.—*The Dental Advertiser*.

British Journal of Dental Science.

LONDON, MAY 1, 1882.

OUR "SPECIAL LINE OF CONDUCT."

THE Honorary Secretary of the British Association has written a letter to the 'Missouri Dental Journal,' and, by way of getting it more quickly conveyed to the quarter where he *designs it to be seen* (North of England) than could be done through that circuitous channel, has also sent it to the 'Journal of the British Dental Association,' thereby not only ensuring expedition, but also kindly relieving the editor of the former periodical from all trouble or anxiety on the subject, and himself the faintest possible risk of non-insertion.

With the letter, as a whole (which will be found on p. 461), we have no particular concern, but as the Honorary Secretary travels a little out of his way to cast insinuations on ourselves we will endeavour to show where we consider him in error. In his third and fourth paragraphs he says:—"Your correspondent says that the Dental reformers are broken up into two parties, and assumes that the 'British Journal of Dental Science' represents the one party, and that the 'Journal of the British Dental Association' represents the other," and, "Now, sir, there may be any number of unorganised parties in the profession (if one can conceive such an anomaly), but I only know of one party which is organised and incorporated, and which publishes a list of its members and an annual balance sheet, that is the British Dental Association, and it is represented by the journal of the Association." What "party" is here alluded to it is somewhat difficult to conceive, and what virtue is mysteriously associated with a "balance sheet" we confess we are at a loss to understand. That the 'Journal of the British Dental Association' is the mouthpiece of the Association, or rather of its guiding

spirits, we are ready to admit, but that it represents the *political views* of the members generally we emphatically do not admit. Indeed, we rather suspect that, as almost every shade of opinion is held amongst the members, as a body, that it would be impossible for any one journal to represent them. He proceeds:—"The other journals published in this country embody the opinions of single editors; one is issued to advertise the goods of the proprietors." He does not stop to mention that "the proprietors" are a large and influential body—not party (although they do publish a balance sheet)—of Dental practitioners (many of them members of the Association), and, further, that the name of its editor (formerly editor of the present Association journal) is at once a guarantee that its "Advertising Agent" and his doings are as distinctly separate from the "responsible" editorship as even with the immaculate 'Journal of the British Dental Association' itself. He further proceeds, "and the other is a publishing venture, and is written for sale and profit rather than for the maintenance of any special line of conduct." As to who informed him of the motives of these two journals, or whether he simply makes gratuitous "assumptions," such as he seems so much to despise in "The English Correspondent," we are left to discover as best we may.

As to whether we have or have not had and maintained a "special line of conduct"—and an unvaryingly liberal one too—for something over five-and-twenty years, we will leave our readers to be the best judges; but that our critic is not averse to the loaves and fishes arising from a "publishing venture," he has himself proved in his tenth paragraph, respecting the Advertising Agent's circular which was ridiculed in these pages. For if the 'Journal of the British Dental Association' were only the mirror of the Association, and published solely for the purpose of representing its views, it would require no "advertising agent." It is not usual to hamper the 'Transactions' of learned societies with paid advertisements. We commend to the Honorary Secretary the serious study and application of the four last lines of his ninth paragraph: "so does this assumption of purity of motive for himself, by imputing the meanest of all motives to those

whom he criticises, prevent me (us) from approaching one so pure while I am (we are) steeped in self-interest."

We believe in our hearts that his real motives and wishes, as well as those of the Association itself—which is so much indebted to his untiring energy—are identical with our own, viz. the raising of our profession to the level of a learned one. We only differ in the means to the desired end. We think that he and they have missed the real "spirit of the Dental Act," and by ignoring the thirty millions or so of the population—*who are* interested "parties"—and looking upon the Act as mainly intended to benefit a thousand or two Dentists, are, by striving after the practically impossible, losing the grand opportunities which their combination and resources undoubtedly afford them of benefiting all.

OUR view is that nothing but the most liberal course will avail. We have the Act, and with it many difficulties. It gives the title of *Dentist* to many who ought never to have possessed it, it probably includes many with little skill and less education, but for all that it stays the *addition* to our ranks of any except well-educated and highly-trained practitioners. We could point to several of the leading practitioners of the present time who commenced their career by simple apprenticeship—without passing any preliminary examination in arts—continued as "assistants," and by indomitable pluck and perseverance raised themselves into "practice," and *then*—all honour to them—studied and gained for themselves the M.R.C.S. diploma, when, be it remembered, it was entirely voluntary.

What has been done can be done again, and what we should like to see would be every possible facility offered to those disposed to help themselves. We would have no limit of time for the examinations, *sine curriculo*, but we would have *no distinctions* in the examination itself. We would allow any man of reputable character who is *on the Dentists' Register* to gain his knowledge how and when he chose, but were it possible we would not have his examiners know whether he came before them with or without curriculum. We would have them pass him only on his merits. We deplore what we term the "ragged fringe" of

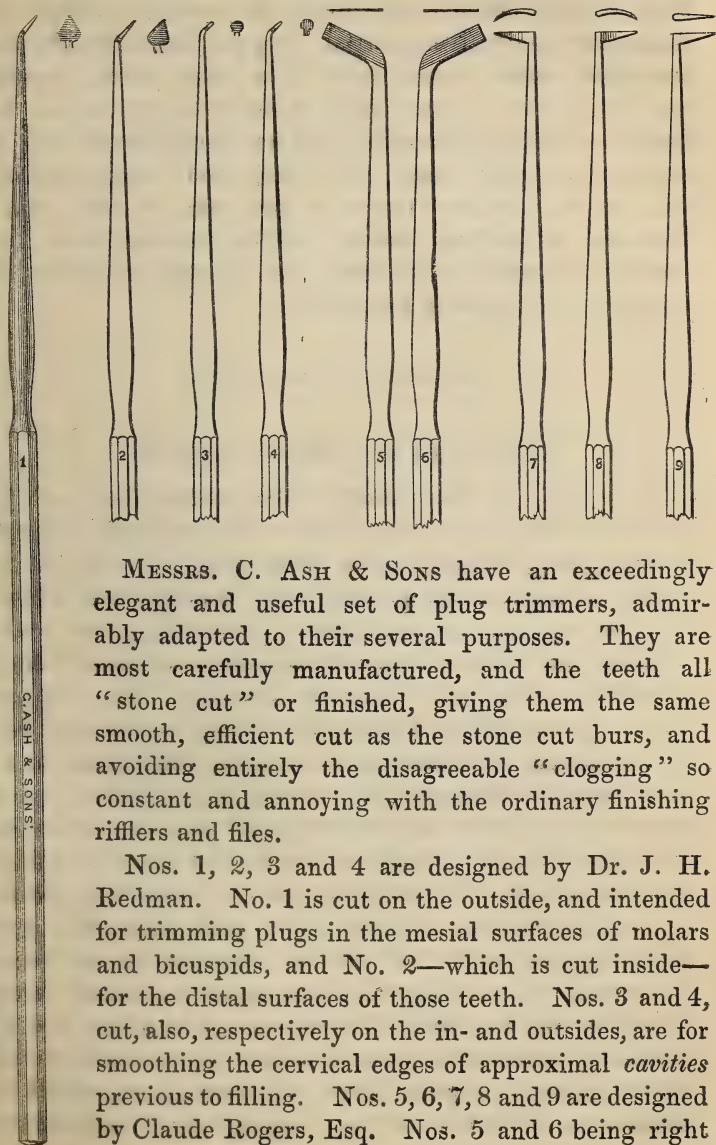
the Register, but we equally deplore the waste of energy and funds which the Association are expending in the—as we consider—vain attempt to lessen it to any appreciable extent. If they must fight, we should like to see them make their trial of strength with some of the wealthy, advertising practitioners, who, by both precept and example, do more to disgrace the profession than all the dregs put together. Could the major transgressors be forced into professional rectitude, the minor would the sooner become obscure or depart, having no longer the glittering bauble of financial if unprofessional success dangling apparently within their reach *to tempt* them to remain.

For many years our watch-words, our “special line of conduct” has been “REGISTRATION AND COMPULSORY EDUCATION,” now that that once thought Utopian idea is realised, we would add MODERATION and CONCILIATION not exasperation. The Dental Act is, as yet, but an infant of a few years old, and no amount of forcing can bring it to maturity before its normal time, *i.e.* probably some twenty to five-and-twenty years. The sooner this fact is realised the sooner we may hope to see peace and goodwill amongst all parties and true association for the only desirable end—universal proficiency.

WE have received an extensive series of letters on the subject of the Irish Diploma question—*pro* and *con*—but principally refuting in emphatic language the value placed upon them by “M.R.C.S.” We see no good that can be derived from perpetuating these criminations and recriminations, especially as we have received a letter from “M.R.C.S.” explaining that it is “not the men but the system” he regrets. We have, however, satisfaction in having reason to believe that free discussion has tended to bring the Council of the Royal College of Surgeons in Ireland to a more correct view of its responsibilities, and that a new rule will be adopted in accepting candidates, calculated to throw the lustre upon the diploma which it should possess.

Manipulative Miscellany.

NEW PLUG TRIMMERS.



MESSRS. C. ASH & SONS have an exceedingly elegant and useful set of plug trimmers, admirably adapted to their several purposes. They are most carefully manufactured, and the teeth all "stone cut" or finished, giving them the same smooth, efficient cut as the stone cut burs, and avoiding entirely the disagreeable "clogging" so constant and annoying with the ordinary finishing rifflers and files.

Nos. 1, 2, 3 and 4 are designed by Dr. J. H. Redman. No. 1 is cut on the outside, and intended for trimming plugs in the mesial surfaces of molars and bicusps, and No. 2—which is cut inside—for the distal surfaces of those teeth. Nos. 3 and 4, cut, also, respectively on the in- and outsides, are for smoothing the cervical edges of approximal *cavities* previous to filling. Nos. 5, 6, 7, 8 and 9 are designed by Claude Rogers, Esq. Nos. 5 and 6 being right

and left, with flat, straight, thin blades for trimming down the cervical margins of fillings, are to be used with a pushing motion, and literally cut the gold away without any chance of tearing or fraying its edges or surface. Nos. 7, 8 and 9 are a most decided and ingenious novelty, of which the illustrations only give a partial idea, one has a straight and the others curved blades tapering to points, which together can be applied to any angle or curve of any tooth, but instead of being "file cut" they are simply made with all edges square and sharp (stone cut), each edge, therefore, will act as a cutter or scraper, and can be used with a thrusting or drawing motion, and are certainly most convenient instruments; they may also be used as scalers, for which they are equally serviceable.

FOSSILINE (A WHITE FILLING).

THE DENTAL MANUFACTURING COMPANY have a white mineral filling under the above name prepared by Pterodactyle, junr., Solenhofen, for which they claim that it has "peculiar antiseptic properties," and "contains *no chlorides*." We can say from an experience of something over twelve months that it forms a valuable addition to our white fillings, standing well the test of wear for that time. We have used it more particularly as a temporary filling, and found it have the advantage of admitting its use, *as a soft paste*, in the most sensitive teeth, without causing any irritation, and on removing it a few months subsequently (a by no means easy task) have found the walls of the cavities sound and fit for metallic fillings. We have also used it for flooring cavities, as a non-conducting medium under gold plugs, with great advantage, and in no such case has inflammation intervened. It certainly has some merits of convenience of manipulation. The fluid is always ready for use, and never alters, it is not absolutely necessary to keep its surface dry as it will set well under saliva, neither is there any necessity to varnish its surface for the same reason. It is claimed as a permanent

filling, but of this, of course, we are unable to speak, a twelvemonth being far too short a time in which to determine, but we can say that the cases we have been able to watch are still perfect. They mention that after three years' trial the same result is obtained, and that the powder alone used with cotton and mastic makes a good temporary plug in sensitive teeth, this we have not had an opportunity of testing. The instructions for mixing differ somewhat from those for oxy-chlorides, and should be carefully studied and followed.

NEW AMERICAN TEETH.

MESSRS. W. & J. JAMIESON have a new flat and vulcanite plain pin tooth made by an American firm, who have only recently taken to this branch of manufacture. They are of excellent character, colour, and general appearance, composed of a seemingly hard and strong material. Messrs. W. & J. Jamieson inform us that they are the sole agents in England, and that they can make a considerable reduction in the price of these teeth in comparison with the ordinary rates of such articles.

NEW OPERATING STOOL.

IN noticing the above in our issue of April 1st last we inadvertently stated that it was manufactured by Messrs. Codman & Shutcliffe and sold by Mr. Rutterford, whereas we should have said that it was designed and made by Mr. Rutterford himself.

NEW AMALGAM.

MR. RUTTERFORD has a new amalgam made from copper and somewhat similar to "Sullivan's," but precipitated with iron instead of zinc. It has the advantage of being

supplied with the proper amount of mercury in it, so when softened is ready for use and in proper condition. It is said to have all the advantages of the old familiar Sullivan's with the additional one that it does not discolour the teeth except in rare cases. We have not been able as yet to give this new filling any trial beyond that it mixes well but rather dry, although it seems to make a good plug with moderate condensing, we shall, however, watch it with interest. We are informed that several gentlemen have used it for some time, and, for such cases as it is suitable for, use no other. We can only trust some of these operators will favour us with their experiences of its utility, and hope to give a further notice of it at some future date.

NEW AMERICAN PINK RUBBER.

MR. J. RITCHIE, 51, Marlborough Street, W., has a new rubber named "American A.X. Pink Facing," which is stated to be a pink rubber without solarisation. It is of a very excellent colour, although when vulcanised with "bow spring" not better or worse than other good pinks, but we think rather tougher than most that we have previously used. At present our experience is limited to a few trial pieces, so we cannot say much respecting it, but hope to give further notice at a future time, and in the interval shall be pleased to have the results of any one's using it to aid us in forming a just value of its merits.

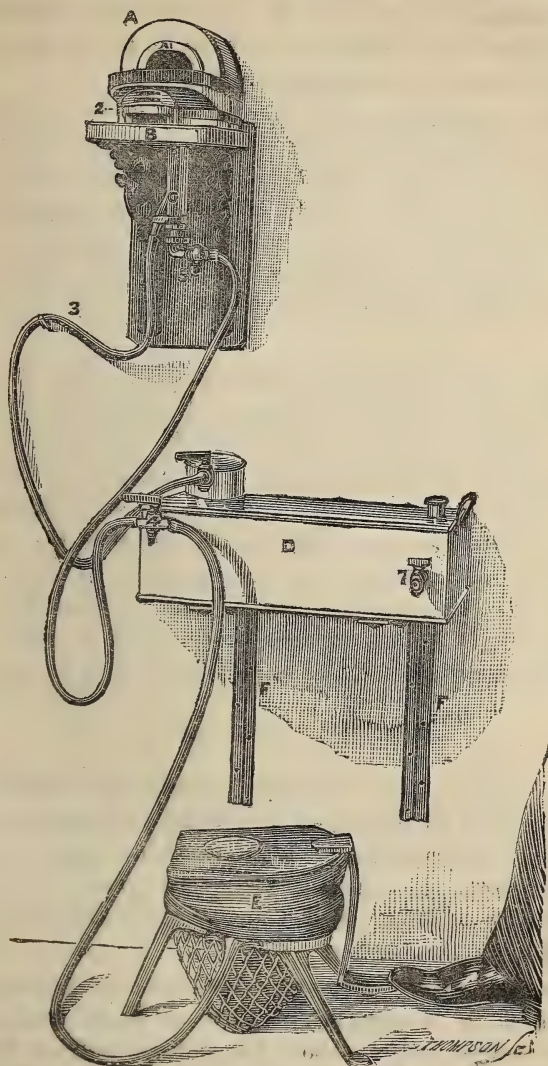
CONTINUOUS GUM FURNACE.*

By A. B. VERRIER, L.D.S.I., Weymouth.

THIS exceedingly handy and compact little furnace, which is only eight inches high, eight inches broad, and six inches deep, stands on a bracket and can be used either with gas

* Exhibited in action at the Odontological Society, April 3rd, 1882.

or petroleum spirit (as represented below), is as completely under control as it is possible to imagine, admitting of a slow gentle drying heat or a fierce blast at the will of the



operator, thus enabling the most delicate manipulation of that most beautifully natural-looking work of any that can be

supplied. The former objections of the difficulty of managing the old cumbrous apparatuses are by this completely removed, and as the elegance of the finished pieces commend themselves to all—both operators and patients—who have once seen them, we have little doubt that the process will come far more generally into use.

By those unacquainted with the minutiae of the working it seems at first sight both a troublesome and unsatisfactory proceeding, but a little practice and close attention to the lucid instructions given by Mr. Verrier in his pamphlet on the subject, and the aid of his simple little apparatus, soon dispels the illusion, and demonstrates that the working is as easy and cleanly to do as it is pleasing and natural when done.

Although there are several successive stages to go through in applying the gum body and glaze, so that the work requires as many “firings;” and here it is that the perfect control of heat is so thoroughly appreciated. A “firing” can be commenced and the plate again handled in about twenty or twenty-five minutes from the time of lighting the gas, so that in point of rapidity a case can be made in little more time than that required for vulcanite, and less than for gold. To those who had the advantage of seeing it work, this description will be infinitely more tedious than the process itself.

GUTTA PERCHA may be readily purified and bleached in small quantities by adding to a solution in benzole a little fine plaster and shaking, when all insoluble impurities will be carried down, and, after decanting, the gum may be precipitated with alcohol, dried and pressed.—*Journal of the British Dental Association.*

CHLORAL IN TOOTHACHE.—Two or three small fragments of chloral hydrate, about five centigrammes in weight, should be collected by means of a little plug of cotton-wool, and introduced into the cavity of the carious tooth. Under the influence of the chloral the pain subsides in a few minutes.—*Med. News.*

Literary Notices and Selections.

A WARNING.

WE have to bring forward another death from chloroform. A woman, named Sole, receives an injury to the leg from a fall, and is taken to Guy's Hospital. Mr. Ashwell, the house surgeon, finds a fracture, and in attempting to reduce it is solicited by the patient herself to have something given to her to relieve the pain. Mr. Ashwell examines into the state of the heart, detects nothing wrong, administers the anæsthetic, observes that for about two minutes all goes well, and then that there is collapse, and in spite of artificial respiration and other restorative means, a fatal catastrophe. The post mortem reveals what was not expected from the physical examination during life, namely, fatty degeneration of the heart; a heart, in other words, which could not resist the double shock of the pain first, and of the chloroform upon the pain. At the inquest held on the body of the unfortunate woman the husband complained that the chloroform had been administered without his knowledge, and that the post mortem had been conducted without his permission. We cannot wonder at these complaints; and while we do not blame Mr. Ashwell, who acted in entire accordance with custom, we must not conceal our sympathy with the complainant. Had the patient been a person of wealth and position, living in her own house, it is all but certain that the husband would have been consulted on both subjects; that before the chloroform was administered the possible danger would have been pointed out; and that, after the death, the necessity for a post-mortem inquiry would have been set before him. Ought not, then, the same care and consideration to have been shown to the hospital patient? We think so, and we trust that in future no administration will take place without the knowledge and permission of the friends of the sufferer. There was never a time when the

action of the profession was so jealously watched as at present. The spreading intelligence, the widely-searching criticism of all classes and all professions, are making the responsibilities of medical practice much more onerous than they were, and it is as unjust to ourselves as to the public that we should undertake to bear every issue of life and death under anæsthesia on our own shoulders. If we had in our possession a perfectly safe anæsthetic the case would be different, and we might, in the name of humanity, presume on taking liberties with personal freedom which even then were barely reasonable. As it is, we have no right to take such liberties at all, and we trust that from henceforth a custom more honoured in the breach than the observance will be honoured in the breach, and in no other way.—*Lancet*.

THE MECHANISM OF DEATH FROM CHLOROFORM.

A DISCUSSION is now proceeding at the Paris Académie de Médecine on the dangers of chloroform, and the most noteworthy contribution which it has elicited is a statement by M. Vulpian of certain teachings of experiments on the subject. The lessons are by no means reassuring to those who look on chloroform with grave suspicion. The danger of death is shown by experiment to be present at the commencement, during the course, or at the end of the chloroformisation, and even sometimes for some hours or days subsequently. The occasional cases of death immediately after the commencement of inhalation receive their explanation from experiment. In healthy animals respiration may be at once arrested by pinching the superior laryngeal nerves, and even by a strong sensory impression. Thus, if chloroform is merely applied to the nostrils of an animal, respiration is sometimes arrested. The medulla oblongata has been thought unaffected by the inhalation of chloroform; but, although resisting the influence of chloroform longer than

other parts of the nervous system, it is unquestionably affected, in some degree, even in moderate anæsthesia. If the pneumo-gastric nerves are divided in a healthy animal it continues to breathe. Stimulation of the central ends then arrests respiration, which recommences, even though the peripheral extremities are faradised. But if the same experiment is performed on an animal under the influence of chloral or of chloroform the breathing does not recommence after it has been arrested by stimulation of the divided pneumogastriacs. This shows that in the anæsthetic state the medulla oblongata is in a functional condition different from its normal state. Again, in an animal under normal conditions faradisation of the peripheral ends of the divided pneumogastriacs arrests the heart in diastole; but if the stimulation is continued the contractions recommence. If the same experiment is performed on an animal under the influence of chloroform, the arrest of the heart is more readily produced, and is final. Hence chloroform acts on the respiratory centres; but it acts also upon the motor ganglia of the heart. In animals the cardiac failure is much more grave than the respiratory failure; life cannot be saved in more than one in forty of the former, although in the more frequent cases of respiratory failure life can often be preserved by artificial respiration. M. Vulpian fully confirms the slighter degree of danger involved in the use of ether, in consequence of which he invariably prefers it as a means of obtaining anæsthesia in experiments on animals.—*Lancet*.

NOTE ON A CASE OF RANULA.

By C. B. LOCKWOOD, F.R.C.S.

It seems to be generally agreed that in almost every case of ranula the cyst has no connection with the ducts of the salivary glands. This point is supposed to be proved by the

fact that in nearly all cases a probe can be passed into the submaxillary (Warton's) duct, and no communication discovered between it and the cyst. This method seems to exclude Warton's duct in a satisfactory manner. There are other salivary ducts in the immediate proximity to which it cannot be applied. There is no particular reason why the ducts of the sublingual glands should not be capable of distension and conversion into ranula. If any salivary duct be distended with secretion, the contents of the cyst might reasonably be expected to possess the usual properties of saliva. In the case of ranula the chemical and physiological characters of the contents may be taken as evidence of its source. Mr. Baker, in his paper written to show that ranula has seldom or never any connection with Warton's duct, mentions that "it is said" that the chemical composition of their contents differs from saliva. He does not give any definite experiments, and none are to be found in the usual text-books; it may, therefore, be worth while to make a note of a case in which they were made.

E. W—, aged fourteen, presented herself with a very large typical ranula beneath the right side of the tongue. It had only been noticed two months. The submaxillary ducts were not probed, but appeared free and discharged ordinary thin saliva. A large piece was snipped out of the cyst-wall and the contents saved. They consisted of about two drachms of a very tenacious yellow transparent fluid of faintly alkaline reaction. A portion was found to be soluble in distilled water, from which it was precipitated white and opaque by the addition of acetic acid. Solution of perchloride of iron produced no claret-coloured reaction: it may, therefore, be inferred that no sulpho-cyanide of potassium was present. Added to starch solution, and kept for some time at a gentle heat, no conversion into glucose was discovered: the fluid, therefore, contained no ptyalin; it appeared to consist of almost pure mucin.

It might be argued that the contents of this ranula may have come from a salivary gland, but have been so long in the cyst as to become inert. If they had been originally saliva great condensation must have occurred, and it might

therefore be expected to have been made more active than usual. Moreover, these ferments do not lose their activity when kept for very long periods. A glycerine extract, for instance, remains active for an indefinite period.

It seems probable that the cyst in this case was due to the distension of one of the sublingual mucous glands.—*Medical Times and Gazette.*

ANTISEPTIC USE OF BORAX.

IN relation to the recommendations which have been made of employing borax as an antiseptic, Dr. Atkins states that for eight years past he has treated all cases of erysipelas by means of a solution of borax in glycerine (one drachm to the ounce), well rubbed into the skin, and applied on linen. In every case it has seemed to cut short the disease promptly, the characteristic appearances beginning to fade in a few hours. Sometimes tincture of iron was given internally, sometimes not. Dr. Atkins has also frequently used borax ointment in the treatment of suppurating sores, the results of cuts, burns, bruises, &c. The strength of the ointment is immaterial so long as there is plenty of borax in it. In these cases the suppuration is usually checked at once, the redness rapidly paling away. In minor cases it seems quite equal to carbolic acid.—*Ibid.*

Dental News.

EASTERN COUNTIES' DENTAL ASSOCIATION.

THE first annual meeting of the members of this Association was held on Wednesday, April 26th, 1882, at the Norfolk Hotel Norwich. The objects of the Association

are the consideration of all subjects connected with the profession, the reading and discussing of papers on Dentistry, the promotion of friendly intercourse and goodfellowship among practitioners in the nine associated counties, and rendering assistance as far as possible in carrying out the Dentists Act. There were present Messrs. R. White (President), R. W. White, H. W. Tracy, J. J. Musgrave, J. B. Bridgman (Treasurer), B. W. Harcourt, G. Cunningham, Francis Boulger, W. A. Rhodes, W. Marsh, A. L. Littleboy, W. Stringfield (Secretary), J. F. Cole, A. Jones, and F. Hall. Dr. Hills, Medical Superintendent of the Norfolk Asylum, and Mr. E. Saunders and Mr. James Parkinson, of London, were among the visitors.

The SECRETARY read the resolutions adopted and the bye-laws framed at the meeting when the Association was formed. All the resolutions and bye-laws as originally framed were confirmed. There was considerable discussion on Bye-law 1 which runs as follows :

1. A person registered in the Dentists' Register shall be eligible for election as a member of this Association provided he be of good character, that he does not conduct his practice by means of the exhibition of Dental specimens, appliances, or apparatus, in an open shop, or in a window, or in a show-case exposed to public inspection ; or by means of public advertisements or circulars describing modes of practice, or patented or secret processes ; or by the publication of his scale of professional charges ; or by the assumption of any title, degree, or diploma not recognised by this Association.

Mr. PARKINSON was of opinion that it was advisable to make the laws as elastic as possible. To avoid difficulties in future the clause relating to title and degree had better be left out. As election would be by ballot it would be easy to keep out of the Association any objectionable person.

Mr. R. WHITE said the bye-law was not in accordance with the rule of the British Dental Association. Would any difficulty arise through that bye-law if this Association were proposed to be affiliated to the British Dental Association ?

The SECRETARY said that when the time arrived for affiliating themselves with the British Dental Association the rules of this Association would be subservient to those of the British Dental Association.

Mr. PARKINSON asked whether it was not possible to affiliate this Association at once to the British Dental Association. This Association would then be governed by its own laws.

Mr. R. W. WHITE asked if the bye-laws of the Midland

and Western Counties' Dental Associations were the same as those of the British Dental Association?

Mr. PARKINSON replied that the Western Counties had not the clause this Association proposed to adopt.

Mr. BRIDGMAN explained that it was thought the adoption of this rule would avoid the unpleasantness of black-balling by preventing men making application for membership.

Mr. WHITE said that it had always been intended to affiliate this Association when established to the British Dental Association, and this he desired to see accomplished as quickly as possible. But there were great objections to the expunging of the bye-law in question, unanimously adopted as it was by a former meeting. If they retained that bye-law he did not see how it should prevent the affiliation of this Association to the British Dental Association. No doubt it would be a great disadvantage to this Association if it were prevented becoming a branch of the British Dental Association, because their members being few they could do little, and would be deprived of advantages which other branches enjoyed. For these reasons he was desirous of so arranging the bye-laws that this Association might quickly be made a branch of the British Dental Association.

Mr. PARKINSON said as a branch of the British Dental Association the Association would have no further expense in relation to the publication of their 'Proceedings.'

Mr. CUNNINGHAM asked why they should not take advantage of the experience of the Western Counties' Dental Association and get at once the full benefit of affiliation with the British Dental Association? In doing so they would set a good example. But if there was a prospect that by delay they would get a considerable accession of members, then it would be politic to wait before becoming a branch of the British Dental Association. But it seemed to him that the best men in the profession in the Eastern Counties were already with them.

Mr. PARKINSON, in answer to questions, said that one difficulty the Association would experience by adopting this bye-law would be that it would have to state what degree, title, or diploma they did recognise. But the bye-law would not militate against the Association becoming a branch of the British Dental Association.

Mr. WHITE in that case saw no reason why the bye-law should not be retained. It would be open to the Society to rescind it at any time.

The bye-law was then confirmed.

Mr. JONES, of Cambridge, then proposed that Mr. White, of Norwich, be President of the Eastern Counties' Dental Association for the ensuing year. The more he saw of Mr. White the better he liked him, and he was sure no more competent gentleman could be found to fill the position of President.

Mr. B. W. HARCOURT, of Norwich, who seconded the motion, also expressed his belief that no more fitting man than Mr. White could be found for the office.

The resolution was unanimously agreed to.

The PRESIDENT thanked the members of the Association for the honour they had conferred upon him.

The following gentlemen were elected members of the Council, the numbers of which can be increased:—Mr. R. W. White (Norwich), Mr. J. F. Cole (Ipswich), Mr. W. Marsh (Colchester), Mr. Musgrave (Lincoln), Mr. G. Cunningham (Cambridge), Mr. Jones (Cambridge), Mr. Harcourt (Norwich), Mr. F. Hall (Hertford), and Mr. N. Tracy (Ipswich).

Mr. Bridgman's appointment as Treasurer was unanimously confirmed, as also was that of Mr. Stringfield as Secretary.

Mr. Cole, of Ipswich, was nominated President for 1883, and Ipswich was fixed as the place for the next Annual Meeting.

The SECRETARY then read the first annual report which was as follows:

It is now just twelve months ago or nearly so that Mr. James Turner, the indefatigable secretary to the British Dental Association, suggested to me the idea of forming a branch of that Institution in the Eastern Counties, upon which I wrote to our now worthy President stating the suggestion and requesting him as one of, if not the oldest member the profession has in these parts, to take upon him the initiative and to institute a meeting for the purpose of discussing and deciding how far it might be practicable and political to establish such an association.

Most present this day are individually acquainted with the course adopted, but it may be as well to mention that Mr. White communicated with twenty-one gentlemen for their opinions, and from the majority received replies in favour of the formation of a Dental Association with promises of support.

The meeting of the 5th October last was then convened at which it was determined that this Association should be formed, but for the present to be independent of the British Dental Association, and although some may be disposed to regret this, the resolution was felt to be necessary, for had

we attached ourselves it would have been required of all our members to have become members of that Association previous to their election to ours, whereas some in the Eastern Counties to whom we looked for support in the first instance were not so, and I believe one or two remain in that position at the present. At the same meeting the President elect (now President) was nominated, together with the Treasurer, Provisional Council and Secretary, and the resolutions and bye-laws framed to be approved by you.

The wide area our district embraces, viz. nine Counties, it was hoped would have produced more than twenty-three members, but that, gentlemen, I regret to say is the total number on our books. I believe all have been written to that should be solicited, yet it is possible some I may have overlooked, and therefore take this opportunity of earnestly requesting all members to afford me every information in their power and to send me the names and addresses of any gentlemen as from time to time come to their knowledge and who may be eligible for election.

The objects of the Association and the bye-laws as this day confirmed must, I think, commend themselves to all as being framed upon a very liberal basis.

The Council have met three times, first on the 1st February of this year, when two gentlemen were duly elected members, the President elect nominated and the place of meeting for 1883 proposed, as confirmed by you, and this our first annual meeting arranged for. The second, on the 29th March, when four gentlemen were elected members and the proceedings of this day finally settled, and the third, this day, when three gentlemen were elected members.

In conclusion, I now beg to submit to you my thanks for the confidence placed in me, in appointing me your secretary, and I assure you it will always be my endeavour to forward the interests of our profession to the utmost.

The report was received and adopted.

The PRESIDENT delivered a most interesting and exhaustive address. Tracing the progress of Dentistry almost from the beginning of the present century up till now, and comparing its present position with the condition of the medical profession—"shortly after the commencement of the nineteenth century when physicians, surgeons (the descendants of the barber surgeon) and apothecaries became transformed from heterogeneous classes into a homogeneous profession"—and expressing most liberal sentiments as to the means by which the like transformation should be encouraged and accomplished for our own profession now.

Mr. E. SAUNDERS proposed that the thanks of the Asso-

ciation be given to the President for the able and luminous address with which he had favoured them.

Mr. PARKINSON seconded the proposition, which was carried by acclamation.

The Association then suspended its sitting for two hours, luncheon being provided for the members by the President at his residence, Heathfield House.

After the afternoon meeting the members and visitors dined together. Mr. COLE proposed "Prosperity to the British Dental Association," to which Mr. EDWIN SAUNDERS responded. Mr. JAS. PARKINSON proposed "Prosperity to the Eastern Counties' Dental Association" coupled with the name of the President. After some further toasts the company separated, having enjoyed a most sociable and pleasant evening.

Members.—R. White (Norwich), R. W. White (Norwich), J. F. Cole (Ipswich), A. Rogers (Cambridge), A. Jones (Cambridge), F. Boulger (Norwich), A. L. Littleboy (Norwich), B. W. Harcourt (Norwich), W. Marsh (Colchester), W. A. Rhodes (Cambridge), W. Stringfield (Lowestoft), W. Hay (Norwich), N. Tracy (Ipswich), J. B. Bridgman (Norwich), J. J. Musgrave (Lincoln), H. H. Goddard (Northampton), J. E. Palmer (Peterborough), C. Tindal (Ipswich), H. W. Tracy (Bury St. Edmunds), J. D. Fraser (Ipswich), F. Hall (Hertford, Herts), G. C. Wayling (Bury St. Edmunds), R. Payling (Peterborough), W. Fawcett (Cambridge), Geo. Cunningham (Cambridge).

[The date being so close on our going to press we are compelled to reserve further news and details until our next issue.]

MIDLAND COUNTIES' BRANCH OF BRITISH DENTAL ASSOCIATION.

THE Annual Meeting of the above was held in Leeds on Wednesday, April 26th, in the School of Medicine, the whole of which was generously placed at the disposal of the members and their friends by the Medical Council.

There were upwards of sixty gentlemen present including visitors. Among the latter were C. Spence Bate, Esq., F.R.S. (Plymouth), J. Smith Turner, Esq., and Dr. Walker (London).

The following members and associates attended the busi-

ness meeting :—H. Champion, Esq. (Manchester), retiring President; R. E. Stewart, Esq. (Liverpool), President; W. H. Nicol, Esq. (Leeds), Vice-President; S. Wormald, Esq. (Stockport), Treasurer, and W. H. Waite (Liverpool), Secretary. T. Murphy (Bolton), J. Renshaw (Rochdale), D. A. Wormald (Burg), J. S. Crapper (Hanley), J. M. Nicol (Leeds), E. H. Williams (Manchester), G. Frost (Pendleton), W. Shillingham (Birkenhead), G. Martin (Bradford), J. S. Carter (Leeds), J. H. Carter (Leeds), L. Matheson (Manchester), W. Taylor (Batley), H. Blandy (Nottingham), J. Dilcock (Liverpool), G. Brunton (Leeds), J. E. King (York), W. Glaisby (York), J. G. Roberts (Liverpool), J. Buckley (Hollinwood), H. Wood (Todmorden), E. J. Ladmon (Leeds), J. Taylor (Dewsbury), &c.

The officers elected for ensuing year were :—R. E. Stewart, Esq., President, W. H. Nicol, Esq., Vice-President, S. Wormald, Esq., Treasurer, and W. H. Waite, Secretary.

At the afternoon meeting the President delivered an address. Some interesting communications were furnished by T. Murphy, Esq., on "Cases in Practice," W. H. Nicol, Esq., on "Saliva Ejectors," and J. S. Crapper, Esq., on "Specimens, and Suggestions as to formation of a Benevolent Fund, &c.," and models exhibited. Papers were read by T. S. Carter, Esq., L.D.S. Eng., on "The Degeneration of Human Teeth, specially in regard to the Third Molar;" G. Brunton, Esq., on "The Conservation of Children's Teeth;" and F. Richardson, Esq., L.D.S. Eng. and I., on "Woman's second fall."

In the evening the members dined together at the Great Northern Hotel, upwards of forty gentlemen, including several eminent medical gentlemen, being present, when the toasts were :—"The Queen and Royal Family," by the President; "The President of the Branch," by the Vice-President; "The President and Council of the Leeds' School of Medicine," proposed by T. S. Carter, Esq., and responded to by W. N. Price, Esq., and Dr. Eddison; "The Officers of the British Dental Association and Branches," proposed by J. Horsfall, Esq., and responded to by J. S. Turner, Esq., S. Bate, Esq., and W. H. Waite, Esq.; "The Leeds' Medical Charities," proposed by G. Brunton, Esq., and responded to by Dr. T. Clifford Allbutt and T. R. Jessop, Esq.

[This annual meeting coming so immediately before our going to press, we are unable to give anything but the barest outline of proceedings until our next issue.—ED. 'B. J. D. S.']

ODONTOLOGICAL SOCIETY OF GREAT BRITAIN.

ORDINARY MONTHLY MEETING, HELD 1ST MAY, 1882.

PAPER by Mr. Steele on "Caries." Casual communications by Messrs. Sewill, Stevenson, &c.

FRED. CANTON,
D. FRANCIS KEN UNDERWOOD, } Hon. Secs.

STUDENTS' SOCIETY OF THE DENTAL HOSPITAL OF LONDON.

THE next meeting of the Dental Students' Society will be on May 8th. Chair to be taken at 7 p.m.

APPOINTMENTS.

BAKER, J. A., Esq., late Dental Surgeon to St. Stephen's Hospital, has been elected to the seat on the Council of the Royal College of Surgeons in Ireland.

CURNOCK, G. DENNIS, L.D.S. Eng., has been appointed Dental Surgeon to the Metropolitan Free Hospital, Spitalfields, E.

MCADAM, GEORGE C., L.D.S. Eng., has been appointed Honorary Dental Surgeon to the Hereford General Infirmary.

Correspondence.

[We do not hold ourselves responsible for the opinions expressed by our Correspondents.]

POLYPUS OF THE PULP.

To the Editor of the 'British Journal of Dental Science.'

SIR,—What is the usual treatment of polypus of the pulp? All that I can gather from the text-books seems to indicate the advisability of at once extracting the tooth thus affected, instead of resorting to remedial measures. Mr. Tomes in his

'System of Dental Surgery,' says (p. 471), "In polypus of the pulp preservative treatment will usually fail, owing to a coincident enlargement of the aperture at the extremity of the root, and a morbid condition of the vessels and other tissues to which that aperture gives passage."

Mr. Salter's book I have not at hand, but if I remember rightly he says nothing of treatment, but simply recommends extraction. It would be interesting to know what is the usual practice of "conservative" Dental Surgeons.

I had a case of polypus of the pulp in a second lower molar some two years ago or more. The cavity, which was very large, was completely filled with the granulated mass, and the mouth from that and the state of some of the other teeth was very offensive. My rule being to save everything which can be made serviceable, I removed the polypus and the whole of the pulp, and, after treating with strong carbolic acid, filled in the ordinary way.

Recently I had an opportunity of seeing the mouth, and found the tooth in good condition, doing good service, and likely to last for many years. I am, &c.,

JOHN TRUDE FRIPP, L.D.S.I.

Willesden.

THE following letter from the Honorary Secretary of the British Dental Association appeared in the 'Journal of the British Dental Association':

To the Editor of the 'Journal of the British Dental Association.'

SIR,—I have forwarded to the Editor of the 'Missouri Dental Journal' a copy of Mr. Tomes's address on Dental Education, and of the following letter, not in reply to, but referring to a most extraordinary article, headed "Dental Reform; from an English Correspondent," which appeared in the January number of that journal. As your journal is likely to reach the North of England before the 'Missouri Journal' in which my letter may appear, your insertion of it may enable the "English Correspondent" to have an earlier opportunity of knowing that his very tortuous reasoning has been noticed here than he would have had he to wait the delivery of the American periodical.—I am, sir, yours, &c., J. S. TURNER.

"To the Editor of the 'Missouri Dental Journal.'

"DEAR SIR,—In the letter of your English correspondent appearing in your January issue, there are one or two statements which require counter-statements from one of those whose motives are so unceremoniously impugned.

"As your correspondent clearly ranges himself with such as are 'only fitted to elevate Dentistry because they know how to practise it,' he might consider me presumptuous were I (one of the incompetents) to claim such a position for myself, and seek to discuss the question as his equal. I will, therefore, leave him all his superior knowledge and skill to himself, and confine my observations to the method of his argument rather than try to combat that which he seeks to prove.

"Your correspondent says that the Dental reformers are broken up into two parties, and assumes that the 'British Journal of Dental Science' represents one party and that the 'Journal of the British Dental Association' represents the other.

"Now, sir, there may be any number of unorganised parties in the profession (if one can conceive such an anomaly), but I only know of one party which is organised and incorporated, and which publishes a list of its members and an annual balance sheet—that is, the British Dental Association, and it is represented by the journal of the Association. The other journals published in this country embody the opinions of single editors—one is issued to advertise the goods of the proprietors and the other is a publishing venture, and is written for sale and profit rather than for the maintenance of any special line of conduct.

"To the 'British Journal of Dental Science' your correspondent goes for arguments against what he is pleased to call the other party, *i.e.* the authors and supporters of the Dentists Act, and by manipulating some random expressions of the late editor (a gentleman, by the way, who never was nor is ever likely to be a Dentist, who knew little or nothing of Dental politics when he became editor of that journal, and who seems to have learned but little during his short editorial career), he seems to cite an authority as if he had discovered a new argument against the views of the British Dental Association.

"This reminds me of the American youths who passed the night exchanging clothes, and left off in the morning each a gainer of two dollars. It is difficult to recognise the material progress of the juvenile merchants, notwithstanding the debtor and creditor accounts, and it is as difficult to find out what your correspondent has added to the enlightenment of the profession by his quotations from the 'British Journal of Dental Science.'

"Your correspondent says that 'certain Dentists got up the Dentists' Register,' and that 'the expenses were to a large extent borne by a certain few in London,' &c. The

history of the Dental Reform Movement has been written, and the accounts of the Dental Reform Committee have been published, as also a list of the subscribers to the Dental Reform Fund, and if your correspondent can from any or all of these sources prove his assertions about either the getting up or paying for the Dentists' Register in the invidious sense in which he puts it, or indeed in any sense whatever, then I say that for 'ways that are dark' the 'Heathen Chinese' is nowhere.

"In opening a sentence, your correspondent makes an assumption with a boldness which is only equalled by the grossness of its nature. He says, 'as self-interest is at the bottom of the reformers' work,' &c.

"As the assumption of superiority in being able to 'show how Dentistry is to be practised' set your correspondent above me in discussing the politics of the profession, so does this assumption of purity of motive for himself, by imputing the meanest of all motives to those whom he criticises, prevent me from approaching one so pure while I am steeped in self-interest.

"Yet another assertion is that referring to a circular sent out by the advertising agent of the journal of the Association in which a certain expression was used by that gentleman in describing the journal as an advertising medium. This circular was *faute de mieux* taken hold of and ridiculed by the editor of the 'British Journal of Dental Science.' In reproducing this bit of editorial padding, your correspondent says that this circular was issued 'from the office of the "Journal of the British Dental Association."' I have already said that it was issued by the advertising agent, and although the same printer who prints the journal may have been employed by the agent to print the circular in question, it was no more issued from the office of the journal of the Association, or with the authority of the responsible staff, than was the letter of your correspondent.

"I think, sir, that the question of Dental education is not to be helped forward by the assumption of superiority, either in professional skill and purity of motive, or by rash and groundless assertions being used as foundations for misleading arguments. Rather will I ask you to read the enclosed pamphlet at your leisure, and thus leave the matter with confidence to your decision.—I remain, dear sir, yours truly, JAMES SMITH TURNER, Hon. Sec. British Dental Association."

[WE are unaware of the nature of the "enclosed pamphlet."—ED. 'B. J. D. S.']

To Correspondents.

1. Communications intended for insertion in the ensuing number must be forwarded to the Editor, at the Office, 11, New Burlington Street, London, W. by the 8th and 23rd of the month, and must be duly authenticated by the name and address of the writer.
2. We cannot undertake to return communications unless the necessary postage stamps are forwarded.
3. It is earnestly requested of our correspondents that their communications be written on one side of the sheet only; and we also beg to call particular attention to the importance of a carefully-penned signature and address.
4. All communications relative to subscriptions and advertisements are to be addressed to the Publishers, Messrs. J. and A. Churchill, 11, New Burlington Street, London, W.
5. The Journal will be supplied direct from the office on PREPAYMENT of subscriptions as under:

Twelve Months (post free) 14s. 0d.

Post-office Orders to be made payable at the Regent Street Office, to J. and A. Churchill, 11, New Burlington Street, W. A single number sent on receipt of seven (penny) stamps.

ANSWERS TO CORRESPONDENTS.

G. WARD.—Your letter would avail nothing. Messrs. Webster and Co. had but two lists to decide from, viz. the 'Medical Directory' and the 'Dentists' Register,' and chose the former. Would it not be better to obtain the L.D.S. than complain of their selection?

[Name illegible].—Probably refers to Fellow of the Chemical Society. If you will send the name or context in which it is in conjunction we may be able to give more certain information.

T. M. CLARK.—We are much obliged for your enclosure. It is one of the anomalies of the existing state of things, and difficult to avoid, except by time and improved education.

Communications have been received from Messrs. G. Ward, "M.R.C.S.," Ash and Co., C. Rutterford, J. Ritchie, Secretary Dental Manufacturing Company, T. M. Clarke (Richmond), W. Stringfield, A. B. Verrier.

BOOKS AND PAPERS RECEIVED.

"Journal of the British Dental Association." "Ohio State Journal of Dental Science." "Dental Cosmos." "Missouri Dental Journal." "El Progreso Dental." "Correspondenz Blatt für Zahnärzte." "Deutsche Vierteljahrsschrift." "The Lancet." "Medical Times and Gazette." "British Medical Journal." "Pharmaceutical Journal." "South Australian Advertiser." "Transactions of the Odonto-Chirurgical Society." "Transactions of the Odontological Society." "The Dental Advertiser." "Le Progrès Dentaire." "L'Art Dentaire."

NOTICE.—We desire that it may be clearly understood that our pages are open to all for free expression of their views on matters connected with our profession. We only ask for terseness of expression and MODERATION IN TONE.

When otherwise unobjectionable, difference of political or other opinion will never be regarded by the Editor as a disqualification for the admission of any communication to the pages of the BRITISH JOURNAL OF DENTAL SCIENCE.

British Journal of Dental Science.

No. 344.

LONDON, MAY 15, 1882.

VOL. XXV.

ABSTRACT OF THE PRESIDENT'S ADDRESS TO THE EASTERN COUNTIES' DENTAL ASSOCIATION.

APRIL 26TH, 1882.

AFTER the usual conventionalities the President said : "The formation of this Association has been a matter of intense interest to me, and with unity of purpose and professional good fellowship great results cannot fail to attend this day's gathering, for although few in number now we shall, I trust, be enabled ere many months are past, to attract all members of the profession to our standard who are desirous of placing our calling in a better position than it has hitherto enjoyed."

He then expressed his pleasure in heartily welcoming the members to his ancient and historical city. He congratulated them on their present success, notwithstanding many obstacles; for "although we have an extensive field, the members of our profession are scattered far apart, and those eligible are few in number, yet it is gratifying to know we have those amongst us who are able and willing to give that interest to our meetings by their contributions and discussions, which I have reason to think will ensure permanent success. And further, too, that professional friendships may commence, and a general knowledge of each other ensue, that may tend to remove much that has been the subject of regret to many of us in years gone by."

He remarked on the custom of annual addresses being *retrospective* and *prospective*. "The retrospective I propose briefly to survey is the progress of Dentistry during fifty years, four decades of which it has been my humble lot to

be in practice in this city. The prospective, the future of Dentistry as an offshoot of surgery. Briefly, Dentistry now may be compared to the medical profession shortly after the commencement of the nineteenth century, when physicians, surgeons (descendants of the barber surgeons), and apothecaries, became transformed from heterogeneous classes into a homogeneous profession, recognising only as subdivisions physicians, surgeons, and general practitioners. We must attribute this glorious issue to a frank recognition of common interests. Amalgamation, state protection, and compulsory education."

He acknowledged how much the profession was indebted to the earlier workers—"Cartwright, the elder Parkinsons, Thos. Bell, Nasmyth, of London, Roberts, of Birmingham, Henry Woodcock; of this city, and others, all of high repute in Dental Surgery, for the position that Dental Surgery now occupies."

He thought it most interesting to review the progress of our friends across the Atlantic, whose establishing associations similar to this now inaugurated, resulted in their marvellously rapid progress. Minds met, views exchanged, fraternity sprang up resulting in generally increased experience. Papers were read by the scientific and others by the practical, each benefiting each other. This was their great element of success. Their *success* has been reached by *thoroughness*—thoroughness in every operation, nothing carelessly done, nothing half done. Conservative treatment is their ideal, there are no hasty extractions, troublesome cases are patiently treated, and success usual. In all they do they act with thoroughness. "What a sad contrast to much that is done in this country! Undoubtedly it is our duty to preserve rather than destroy, and *Dental Surgery* will in the future occupy a much more important position than *Dental Mechanics*."

In tracing the formation of the American progress, he said: "In 1840 sixteen eminent American practitioners met at an hotel in New York, among them Horace H. Hayden, of Baltimore, three Parmly's, Chaplain, A. Harris, J. Smith, Dodge, Solman, and Brown;" from that day's deliberations

he attributes the general advance of Dental Surgery, and the periodicals reporting their transactions from thenceforward had given him great information, for which he felt he owed a debt of gratitude. Eleazor Parmby, who commenced his professional education at Montreal in 1815, went to Quebec, where he first saw a tooth "beautifully stopped with gold" by George Waite, of London. He had no idea, he said, at that time how the gold was secured, or what gave it its firm-looking body, its smooth, solid, and polished surface. He saw other teeth that had been treated in England, and beautiful gold plates "*struck*," he having previously only seen them "bent up with pliers." He visited England and Paris, picking up all possible information, and returning to London commenced practice with his brother. His admiration of Waite's stoppings increased the more he saw of them. Other determined Americans followed his example, taking all they saw good in *Europe* as the foundation of the *Great American School*.

Up to this period (1842) John Hunter, Blake, Fox, George Waite, Thomas Bell, Cartwright, and a few others, did much to give Dental Surgery a position. Still, no Dental school existed, and those who wished to learn had to do so as best they could, by apprenticeship to some Dentist, gaining knowledge only of *his* particular mode of practice. Some Dental lectures were given, it is true, at London medical schools, but without special reference to true Dentistry. There were but few Dental works, those of Hunter, Fox, Blake, and Thomas Bell being the chief. There was no clinical teaching such as the Dental students of the present day enjoy, whilst from 1839 (when the Baltimore College was formed) the Americans had the full benefit of the schools so essential to the due teaching of our art. These were the means by which they surpassed us in practical manipulation. The emulation caused by operations, and the marvellous productions of inventive ingenuity described at the meetings of their Association were great features in their achievements. Although the Americans were in advance of the world in *practical work*, in England and on the Continent men were working hard in the scien-

tific department. Thomas Bell, in his *Anatomy, Physiology, and Diseases of the Teeth*, published in 1835, had given us a text-book that is serviceable to this day, and will long be referred to as one of the Dental classics of the world. Purkinje and Retzius (unknown to each other) conducted microscopical researches. In 1835 the former, through his pupil Frankel, announced the discovery of the tubular structure of ivory, and the latter published his researches in letters to the Royal Society of Stockholm. Professor Owen also made valuable investigations in comparative anatomy. In 1839 Alexander Nasmyth gave to the world his researches on the structure of the teeth.

About this time John Tomes, working hard at Dental physiology, made discoveries in the structure of the teeth which obtained for him a higher position among original thinkers than perhaps any have enjoyed in our time. The result of his labours being his *Dental Physiology and Surgery*.

In the mechanical department much had been accomplished, and beautiful works of art had been produced. Forty years ago skilled workers fashioned bases out of hippopotamus and walrus tusks. Those were the days when mechanical Dentistry was indeed an art, but its advantages were confined to the few. Mineral teeth were very inferior, chiefly Parisian. In 1840 Claudius Ash introduced his mineral teeth—wonderfully good for a first attempt—which in the end were to supersede the use of natural. Other makers soon followed, the Americans, producing them from models of nature, a great improvement on earlier attempts.

Twenty-five years back rubber was introduced, revolutionising Dental mechanics, bringing undoubted advantages; but older men look back with regret on the fallen but beautiful bone work. Celluloid must not be omitted, having many admirers, but is not sufficiently successful to form a substitute for vulcanite.

To an American Dentist humanity is indebted for the boon of anæsthetics; in 1846 Dr. Morton, an American Dentist, introduced ether. Dr. Boott, of London, received notice of its effects, and with the late James Robinson, a

Dentist of London, experimented in this country, its introduction being rapid for surgical operations. It was thought harmless, but a death soon occurred and prompted caution. In 1847 Sir James Simpson (then Dr.), of Edinburgh, discovered the use of chloroform. Deaths occurring showed it not free from danger, and for Dental purposes it fell into disuse. Again America stood foremost, and practically utilised nitrous oxide gas, which had been used by *Horace Wells* for Dental purposes in 1844. Happily it continues a comparatively safe agent.

In 1855 it was thought advisable to establish a Society of Dentists in London capable of supporting itself on an equality with the other learned societies in this country; and it was also proposed to memorialise the Royal College of Surgeons to grant a recognised diploma. This proposal was entertained and the first L.D.S. Eng. diplomas were obtained March 13th, 1860.

The Odontological Society had been formed previously (November 10th, 1856), and its first meeting—one of intense interest, was held January, 1857. Great delight was felt, so many meeting for the first time, long known to each other only by name and reputation, followed by lasting friendships and fraternal feelings unknown before to most. From this period the Art of Dentistry certainly made marvellous progress in this country. A Dental school became necessary in connection with a Dental hospital. The clinical teaching thus afforded gave excellent opportunities of manipulative skill and knowledge of the processes by which the Americans accomplished their beautiful operations, and the good results may be seen in the general cases that now come under notice.

For some years it was thought that legislative measures were required to protect the public from the Charlatanism existing in most towns. The matter was warmly espoused throughout the Kingdom, developing itself in The Dental Reform Committee, the result of a meeting held in Manchester in August, 1875.*

* [Presided over by Charles James Fox, when a resolution was unanimously carried, "That Mr. Fox, as Editor of the 'British Journal of Dental

At a committee meeting in 1878, Mr. Tomes, the President, was empowered to forward a statement to the General Medical Council, that since the Dental Practitioners Bill had been before Parliament, 1100 Dentists and 68 (out of 90) Surgeons practising Dentistry had signed in its favour. It appearing thus that the majority supported the measure, unfortunately, they were not prepared to believe a Dentists' Register would admit those who had no pretensions to be called Dentists. The subject being painful was not further entered into. He thought the committee acted wisely after the Act passed to form itself into the British Dental Association with the view of obtaining the full benefit of the Act.

He considers that although many points of the Act are disappointing, it is law and must be abided by, and that all that can be done is to assist the British Dental Association in every possible way, so that it may become "an institution of such magnitude, that its influence must be felt by the legislature should supplementary law be required. The question is, how can the Eastern Counties' Dental Association render assistance? When we look around us, we see practitioners who advertise, exhibit show cases, resort to unprofessional measures which disgust us. How can we admit them to our Association? It strikes me, gentlemen, that it behoves us to act liberally towards them, and to invite them to become members provided they will give up at once those unprofessional acts that are contrary to our rules, and not refuse them admission because they have hitherto been disqualified by their modes of practice. The next generation will reap the benefit of the Act not this."

In America Dentistry stands alone. In England as a branch of surgery. In his early days he confessed that he thought America right, but now believes it better for all to be connected with a profession so elevated as the medical.

He says, "The *résumé* of my retrospective affords:—1st. The decadence of empiricism and advance of rationalism. 2nd. The improvement of *Practical Dentistry* with the growth

Science,' be requested to take steps to secure the formation of a Committee upon the plan suggested in the *leading article* of his Journal, published August, 1875" (*before the meeting*).—ED. B.J.D.S.]

of *Theoretical*. 3rd. A recognised conservatism so necessary because nature has endowed the Dental structures with an excessive durability but with slight power of repair. 4th. The introduction of anæsthetics and the advantages they afford. 5th. The formation of Dental societies and the increased facilities for obtaining Dental education. 6th. State protection, such as the necessity of the age demands. 7th. The suppression of quackery with the introduction of Dental legislation. 8th, and lastly. The development of the British Dental Association for the protection of common interests, the interchange of ideas, and the maintenance of the high honour and integrity of the profession."

The *prospective* for junior members he thought was bright indeed, and they need not be ashamed of their surroundings as their elders often have been. They could make their own position knowing how immensely they can assist their medical *confrères* in all cases with which Dentistry is complicated. If hitherto Dentistry has had a gloomy outlook let all recall the International Medical Congress, and feel proud that Dentistry took its legitimate position in (Section XII).

He concluded by suggesting that all should strive to add to its science, to establish its pathology, improve its chirurgy, and ever follow in the wake of the good ship "Medicina." By these means alone, he thought, the thanks of the suffering and enduring admiration of generations yet to come could be secured.

"DENTAL LAW IN IOWA."—Dr. Wilson, of Iowa, takes a philosophic view of a new enactment, and in writing to the 'Missouri Dental Journal,' expresses himself thus tersely, if inelegantly: "Dentists already in practice in the State are exempt from the law. Any one desiring to commence practice in the State, after the passage of the Bill (March 2nd, 1882), if not a graduate of a regular Dental College, is required to procure a license from a board of five examiners, appointed for that purpose. This leaves the State to be cursed with the quacks already on hand for the next twenty-five years; but, thank the Lord, no new ones need apply."

GUM TREATMENT.*

By GEORGE CUNNINGHAM, D.M.D. Cambridge.

THE choice of this subject for my first contribution to the scientific part of our Transactions has been forced upon me by the firm conviction that my *confrères* do not attach a sufficient importance to the treatment of the gums as compared with the attention they give to the ravages of the demon caries, and that the mode of practice adopted by us must be unknown to many. There may be other reasons for this state of matters, but there are two which demand our attention.

Firstly. The patient, as a rule almost, never comes spontaneously to have this particular operation performed, being usually ignorant of its existence as a disease, and being frequently intolerant of the treatment—as from the disease usually causing no pain, the necessity of treatment is not immediately apparent.

Secondly. The Dentist, in our conviction, is not fully alive to the pernicious effect of a diseased condition of the gums upon the natural secretions of the oral cavity, and is not aware of—or ignores—the increased liability of the teeth he fills to redecay from even what may seem to him a trivial localised inflammation of the gum. Before proceeding further we may say that we propose in no way to enter into the discussion of the treatment of that more patent and more aggressive malady of the gums and alveoli known as pyorrhœa alveolaris, as infectious alveolitis, or more familiarly as Rigg's disease, that disease being worthy of a special paper and discussion. We purpose devoting ourselves exclusively to the consideration of the much milder and less obtrusive inflammation of the mucous membrane, with its secondary accompaniments, as being much more frequently met with in ordinary practice, and from its very frequency as being the cause of a greater amount of trouble

* Read before the Eastern Counties' Dental Association, April 26th, 1882.

in the aggregate. The condition of affairs which we have in view is a more or less extended inflammation of the gum, sometimes localised to two or three teeth, more frequently affecting a larger region, and in more troublesome cases involving the entire gum, both of the upper and lower jaws. The existence of this latter condition has been denied by some of the authorities, but we are convinced that we have seen cases where the affection has extended to the fullest possible extent, in fact, we have two such cases on hand now. In its pathological nature the disease differs from the more localised varieties in being more the result of systemic conditions, more or less aggravated by the secondary causes of a deposit of dark nodular tartar. The observations of our authorities on the pathology of the mild forms of gum disease are very limited or conspicuous by their absence, and we must consult Wedl to obtain anything like an adequate description of the gums in health and disease. There are three varieties of gum disease to which the treatment about to be described is peculiarly applicable, viz. inflammation, atrophy, and hypertrophy of the gum, at least in their mild forms.

The first step in the treatment must be a most careful and thorough removal of all deposits of tartar from the necks and roots of the teeth, often a matter of no small difficulty. We recommend no special instruments, as each practitioner has his own particular favourites. The most difficult portions to remove are small hard nodular deposits on the approximal surfaces of the roots, and we have found thin, straight, and slightly curved chisels the most effective. We have found the occasional use of aromatic sulphuric acid very useful in cleansing the surfaces. The application of tincture of iodine will greatly facilitate the removal of that most obstinate variety of tartar, the dark thin incrustation, more resembling a stain than a deposit. The action of the iodine may possibly be explained as transforming insoluble albuminates into soluble iodides. Pumice powder applied with dragon canes and the circular brush on the engine complete the scaling operations. The next step consists in the prodding of the gums with pieces of orange wood trimmed to a chisel

shape, and saturated with the medicament which seems most applicable, deliquesced carbohic acid, dental tincture of iodine, or a combination of both.

After protecting the lips by a pad of bibulous paper or napkin, the prod is carefully passed between and around the teeth, carrying the medicine well up and down into any pockets of gums that may be found, in fact, bring it to act directly on the seat of the disease. The blood, usually of a very dark venous colour, flows more or less freely, so that the prod must be wiped on a napkin or bibulous paper before being used for reconveying another application of the medicament to the gum. Here are samples of the prods as fashioned for the purpose. Carbohic acid, while possessing a distinct anodyne effect, causes in some cases such a painful after effect that we have found the employment of aromatic sulphuric acid useful, as being less potent and curative, but distinctly less painful. Dr. Coffin, to whom I am indebted for my first clinical instruction in the use of the orange prods, recommends the use of hamamelis, both for its obtruding and curative properties; our experience with it is too limited to enable us to speak authoritatively, and we should be glad to have the opinions of other practitioners who have used it. The preparations we used was Pond's extract, but a newer and more elegant preparation—to use an Americanism—is the Hazeline. For a day or two subsequent to the first treatment—if the prodding has been at all severe—considerable uneasiness, not to say pain, is experienced by the patient, but in a wonderfully short time the stimulant and curative effects of the operation become evident. In many instances nothing further is required beyond the painting of the gum with the dental tincture of iodine. The further treatment of the more obstinate cases consists in a persistent search for and removal of nodular deposits and renewed prodding as before. The subsequent proddings cause less and less discomfort to the patient. The blood resulting from the operation decreases in the mouth, and improves in colour at each visit. Even very angry-looking and severe cases yield to some four or five treatments. Unless the patient happens to have a number of teeth requiring

filling we find difficulty in their continuing the treatment long enough, for this reason, when a patient arranges to have his mouth put in order we usually begin with this operation if required, and after two or three visits very little time is consumed in the further treatment. We did not, as a rule, prescribe a mouth wash except in special cases, but from the very excellent results we have obtained with a modification of Herr Witzel's carbolised spirit lotion for brushing the gum in alveolar pyorrhœa, we recommend the following formula as well worth trial and investigation :

R Acid. Carbolic. Crystal. ʒss,
 Sp. Rectificat. ʒv,
 Aq. Menthæ Pip. ad ʒxij,
 Ol. Anisi gtt. viij,
 Ol. Cinnam. Ver. gtt. iv. M. ft. lotio.

To be used as a mouth-wash night and morning.

In Herr Witzel's paper on the "Treatment of Infectious Alveolitis" he deprecates the use of a piece of wood for conveying medicaments to the seat of the disease in the gum or alveoli, and recommends the use of Farrar's abscess syringe. Our experience is that we can successfully apply the medicaments in this way, and the suggestion here occurs that the curative action is not due to the applications alone, but also—and that possibly in no little way—to the mechanical action of the prod. The use of the syringe when the disease is grave and deep-seated seems very feasible, and we purpose experimenting with it.

(To be continued.)

DR. FOX ('Medical Bulletin') reports seventeen cases of facial neuralgia successfully treated by croton chloral hydrate. His formula is as follows:—Croton chloral hydrate ʒij, glycerine fl. ʒij, aquæ fl. ʒiv.—M. In ordinary cases he gives a teaspoonful three times a day, but if the symptoms are very urgent a teaspoonful every two hours until the pain is relieved. In hysteria accompanied by convulsions it is particularly valuable; and in large doses its hypnotic effect is marvellous. Dr. Fox says that its primary action is clearly marked by anæsthesia of the head, and not until after this does its influence extend to the organs of the body.—*Medical Times and Gazette.*

CAUSES OF THE INCREASING DEGENERATION OF
HUMAN TEETH, IN RELATION MORE PARTICULARLY TO THE THIRD MOLAR.*

T. S. CARTER, L.D.S. Eng.,

DENTAL SURGEON, LEEDS GENERAL INFIRMARY.

MR. PRESIDENT AND GENTLEMEN,—It is a lamentable fact that with advancing civilisation there is an increasing degeneration of human teeth, and in order that you may more fully recognise the change that is taking place it will be well to lay before you a few points indicating the superiority of the teeth of the uncivilised of past and present races, compared with those met with in the greatest centres of advancement in our own times.

I am indebted to a valuable article, written by Mr. John R. Mummery, in 1869, for much information on this matter. He examined sixty-eight skulls obtained from ancient British Barrows in Wiltshire, and the probability is that they belonged to a race of people who lived before the time of Julius Cæsar. Amongst that number he discovered only two cases where there was decay, and “not a single instance of irregular position of the teeth.”

In the crypt of Hythe Church, Kent, there is a collection of bones of a race of people who existed several centuries ago, and the skulls of these, to the number of about two hundred, were examined by Messrs. Cartwright and Coleman, who afterwards reported the result of their investigations to the Odontological Society.

They found the maxillæ “presented in all instances remarkably well-developed alveolar arches,” and were unable to find anything “approaching to that which under the term ‘contracted arch’ so commonly exists in the present day.”

The average width of the superior maxilla, taken from the anterior fang of the first molar on one side to the corre-

* Read before the Midland Counties' Branch of the British Dental Association.

sponding point on the other, was found to be $2\frac{1}{2}$ inches, and that of the inferior maxilla, measured across the mental foramina, to be $1\frac{7}{8}$.

The teeth "were remarkable for regularity, neither having spaces between them nor being pressed together, but just touching each other laterally. In quality they might be pronounced excellent, much better than are commonly met with in the present day; of the tissues composing them the enamel was dense, compact, and evenly distributed over the dentine, which was hard and of the opaque yellow description indicative of good structure. In a large proportion the masticating surfaces were much worn, probably by the coarse food of that period."

Amongst the *uncivilised* races of to-day you find a similar state of things existing, and in support of this I will quote you a few statistics given by Mr. J. R. Mummery in an article previously referred to. He examined the skulls of various tribes with the following result:

	Number of skulls.	Total of caries.			Percentage of caries.
Esquimaux	69	...	2	...	2·89
North American (coast) . . .	56	...	2	...	3·57
North American (interior) . .	22	...	2	...	9·09
Fiji Islanders	38	...	2	...	5·26
New Zealanders	56	...	2	...	3·30
East Indian (north)	152	...	9	...	5·92

The Esquimaux, though a stunted race, possess very finely developed maxillæ, and teeth remarkable for solidity and normality of position. As the inherited effects of the active use of a part forms a factor in the theory I wish to advocate, it may be well to notice that the Esquimaux are a great *flesh*-eating people, living principally on reindeer, whales' *flesh* and blubber, from "ten to fourteen pounds of raw meat per diem being considered a reasonable allowance for each man."

The American Indians have teeth little prone to decay, and it is interesting to learn concerning them that the tribes inhabiting the north-western portions of the country have these organs worn down nearly to the level of the gum, a feature not observable in those of the interior. It is

accounted for as follows:—Near the coast the principal food is fish, which they split open and hang out or lay on the shore to dry. While there sand gets blown in and mixed with the flesh, which, when afterwards taken into the mouth, produces this excessive attrition.

Australians and New Zealanders have well-developed jaws and most regular teeth, and their molars are often of an extraordinary size.

This is also the case with African races. I have before me the model of a mouth of a Zuluman, which I will pass round. Notice the fine development of the dental arch and perfect symmetry of the teeth, which are all apparently sound. Supplemental teeth are very common amongst them, “the third molar is frequently larger than the second.” They are great flesh-eaters, living principally on big game, as the elephant, hippopotamus, &c.

The instances to be met with of inferior organisation of the dental organs amongst the Bushmen of South Africa may be accounted for by the fact that these people are of exceedingly low physique, the local lesion being merely one of the many indications of general insufficiency of development, and a similar state of thing may be often observable in the mouths of *microcephalic* idiots.

The teeth of the *civilised* of to-day compare very unfavorably in structure and position with those of our ancestors, or the races I have described. On investigation, it becomes at once evident that amongst the middle and upper classes, and to a less extent among the lower, there is a degenerating power at work, producing great disintegration of tooth substance and abnormality of position. This is more evident amongst the residents of large and crowded cities than the inhabitants of agricultural districts. Its progress is rapid, so that one rarely meets with sounder teeth in the children than the parent, and a mother will commonly ask, “Why is it my daughter’s teeth are so much more fragile than my own?”

Dr. Richardson, in his paper read before the Odontological Society last November, states that from his tabulated clinical records he find that “over 80 per cent. of the

persons who came to him were affected more or less severely with dental caries, and the number examined amount to over 4000 of both sexes and of all ages."

In his experience this disease is more prevalent now in the young than when "he commenced medical practice thirty-two years ago."

Mr. Coleman, in a paper read before the same Society, states that on examination of the mouths of 200 young persons, ages from seven to fifteen years, he found "no less than 70 with dental arches more or less contracted or otherwise irregular."

The demand for Dental aid is greater than formerly, and though, among other causes, attributable to increase of population, there is a proportion of it due to greater frequency of oral diseases.

In the mouth of a savage you will find the teeth form graceful curves, their structure is dense, the wisdom teeth large and in normal position.

In the mouth of the every-day patient you see teeth of a nature soft, and owing to a frequent want of relation between them and the size of the jaws, they are found to assume various degrees of irregularity, and in extreme cases it is impossible to conceive the diversity of situation in which they may not be met with.

Mr. Tomes mentions an instance in which the third molar on each side was found embedded in the substance of the ascending ramus, the crown of the one on the right side projecting into the sigmoid notch. In another the tooth pierced the skin just behind the angle of the jaw.

Caries and malposition are not the exception but the rule. The most common manifestations of degenerative tendency are undue prominence of canine teeth, early loss of first permanent molars, and diminutive wisdom teeth, so uncertain as to period of eruption. Also the serious mischief which the latter often induces during the progress of dentition.

It is not necessary for me to say more to prove the evident deterioration which you will have observed in private practice and appreciate as fully as myself, and I will therefore

proceed to give you a suitable explanation of the probable cause. The one advocated so strongly by Norman Kingsley, that there is a relation between the increase of nervous diseases and greater frequency of oral degeneracy, is the theory I will lay before you as most reliable.

In these days of progress and competition, when man has to live more by the use of his brain than in former times, and the demand for mental ability both for business purposes and social advancement is greater than formerly, physical development is subordinate to that of increase of brain substance. Hence you find less muscular tissue and a corresponding loss of vital force and ability to perform feats of endurance, but there is a gain in intellect and mental capacity. There is an increase of brain power at a sacrifice of muscular fibre, brought about by nervous exaltation and the injurious effects of town residence. The style of living taxes the brain to excess, "it develops a great predominance of the nervous temperament at a sacrifice of other parts of the body, which by inheritance is increased from generation to generation." Hence diseases of the brain and nervous system, as apoplexy, insanity, and paralysis, are becoming more numerous, as you will see by reference to the Annual Report of the Registrar-General. The death-rate from these causes has risen from 1116 per million in the five years, 1850-4, to 1400 per million in 1875-9, an increase of no less than 25 per cent. in thirty years.

Some valuable information may be obtained on this subject from three letters written by Dr. Rabagliati, and published in the 'British Medical Journal' during December last, from which I find as follows:—If the death-rate of the three years 1838-40 be compared with that of the four years 1876-9, it appears that the mortality of the former period was 22·3 per 1000, and of the latter 21 per 1000, or an average duration of life of 44·8 years, against 47·6, showing an increase of 2·8 years of life to each individual in this country.

But this addition to human life has been brought about by a better treatment of zymotic diseases or fevers, for if they be excluded from the mortality rate, it can be shown that

human life has actually shortened during the last thirty years.

Dr. Rabagliati is of the opinion that "worry" is a *vera causa*. He says:—"Life is carried on in so much more complex a way; there is more haste and pressure; competition, business men say, is so much keener; the speed of railway trains, and the urgency of telegraphic and telephonic communication is so much more pressing, that the general opinion cannot be very far wrong, that there is far more worry or anxiety than there used to be."

Of adults mortality is greater amongst males than females, probably owing to the latter being less subject to anxiety than the former, added, of course, to the fact of the relative difference of occupation and attendant dangers.

(To be continued.)

THE CHEMISTRY AND PHYSIOLOGICAL ACTION OF MERCURY AS USED IN AMALGAM FILLINGS.*

By E. S. TALBOT, M.D., D.D.S., of Chicago, Ills.

THE name Mercury was given by the ancients in honour of Mercurius, the messenger of the gods, whose volatile character mercury is supposed to typify. It is seldom found in the native state, but is usually combined. The most important, as well as the most abundant combination, is the sulphide of mercury, or cinnabar. It is found united with silver, forming an amalgam. The largest and richest mines are found in California. The process of obtaining pure mercury from the sulphide is very simple. The ore is mixed with one half its weight of lime and then distilled in iron retorts. The mercury is extracted and the lime remains in the retort. It is a heavy fluid metal, odourless, tasteless, of a whitish colour, and when free from other metals it does not tarnish, and its globules roll freely over white paper without

* Read before the Illinois State Dental Society.

leaving a streak or losing their form. It is liquid at ordinary temperatures. It boils at 662° Fahr., and solidifies at 40° Fahr. into a malleable mass of octahedral crystals. It is volatile at all temperatures, evaporation being much accelerated by the application of heat. The symbol is Hg; atomic weight, 200. Mercury combines with other elements and radicals in two proportions. Those compounds in which the *lesser* acidulous radicals are united are termed mercurous. The higher mercuric—thus, calomel (HgCl) is mercurous chloride, while corrosive sublimate (HgCl_2) is mercuric chloride. Mercury combines with chlorine, iodine, bromine, lead, oxygen, phosphorus, sulphur, arsenic, bismuth, &c., forming compounds, some of which are used medicinally. The metal itself, rubbed up in confection of roses, liquorice or suet, until globules are not visible to the unaided eye, is used in medicine.

Amalgams were introduced into this country as fillings for decayed teeth in 1833. Since that time unlimited discussion has arisen among the general practitioners of medicine, as well as the Dentists, in regard to the practicability of utilising this material in Dentistry. The first amalgams were composed of pure silver and mercury, manufactured by M. Taveau, later, Dr. Evans combined pure tin with a small quantity of cadmium, and Dr. Townsend formed an amalgam with four parts of silver to five parts of tin.* Following these compositions came numerous others made from gold, silver, platinum and tin, until to-day we have more than a hundred varieties in the market, varying slightly in metals and proportions, that each manufacturer may rightly claim an original preparation. These different metals are melted in a crucible in their proper proportions by weight, and poured into ingots. These are filed or cut into minute particles ready for use. When the cavity in the tooth is prepared, a sufficient quantity of filings is rubbed up with mercury into a paste, the surplus mercury squeezed out, and the filling is inserted into the tooth.

From its first application as a filling, the better class of

* Dr. Townsend disclaimed being the originator of this formula.

Dental practitioners waged war against it on general principles; not alone on account of the deleterious effects of the mercury in its composition, but because of its unsightly appearance and demoralising effects upon the Dental profession. The manner in which it was introduced into the country called forth the censure of all having a regard for professional etiquette: "Two adventurers, without skill or any claim to the title of Dentist, suddenly appeared in New York and began Dental practice amid such a shower of advertisements, a profusion of display, and a metaphorical flourish of trumpets, as caused our staid and dignified Dental ancestry to bound with surprise and indignation."*

From that time onward the use of amalgam has increased until now tons are consumed yearly in filling teeth. Dr. Harris, in his opening address to the first class of the Baltimore College of Dental Surgery, in 1840, says: "It is one of the most objectionable articles for filling teeth that can be employed, and yet, from the wonderful virtues ascribed to this pernicious compound by those who used it, thousands were induced to try its efficacy."

At the meetings of the Dental societies this subject was spiritedly discussed, with strong arguments against its use. The first official act in the matter was the appointment, in 1841, of a committee by the American Society of Dental Surgeons, to report on the use of lithodeon—mineral paste, and all other substances of which mercury is an ingredient, for stopping teeth. They reported in substance that the use of all such articles was hurtful to the teeth and every part of the mouth, and that there was no tooth in which caries in it could be arrested and the organ rendered serviceable by being filled in which gold could not be employed. This report was unanimously adopted.†

At a meeting of the same society, July 20th, 1843, the use of amalgams was declared to be malpractice, and a committee appointed to further investigate the subject. They referred the matter to the Medical Society of the County of Onondaga,

* 'History of American Dentistry.'

† 'American Journal of Dental Science.'

New York. The report of the medical committee was to the effect that no care in the combination or use of the paste will prevent its occasional bad effects.

In 1845, the Mississippi Valley Association of Dental Surgeons resolved that the use of amalgam fillings was unprofessional and injurious, and would not be countenanced by its members. The actions of the various societies had very little effect; amalgam forced its way into the offices of the majority of Dentists in the country. Many excellent practitioners were expelled, and others resigned from the societies to which they belonged.

In 1850, a resolution was passed unanimously by the American Society of Dental Surgeons, to rescind the pledge made by the same society previously. Thus ended the so-called amalgam war. It will be observed that no scientific researches were made to ascertain whether deleterious effects were produced by mercury; the chief object of the disturbance was, apparently, to rid the profession of charlatans and their obnoxious materials. These discussions, which have caused so much bitterness and enmity among the members of societies, have latterly aroused a feeling of inquiry into the scientific analysis of this filling for teeth, resulting in the discovery of a quality in its composition capable of producing salivation, and all other symptoms of poisoning. Many able practitioners of Dentistry have experimented with all the different acids, with no satisfactory results. When we consider that nitric acid dissolves mercury at 60° Fahr.—concentrated sulphuric acid dissolves mercury only when heated; hydro-chloric acid does not affect it at all—how can we expect the weaker acids of the mouth, diluted by saliva, to cause a chemical change?

If past experiments have proved unsatisfactory, it does not discourage me in the attempt to discover, if possible, by experiment and by careful study of the subject of mercury in its every particular, some clue to this perplexing question. Having satisfied myself that the poisonous effects are not produced by the chemical changes in the mouth, I have entirely ignored this theory, and have looked about for a more simple and direct cause. In commenting upon mer-

curial poisoning, the idea has been advanced that the vaporization of mercury takes place only during the hardening process, and that being consummated so quickly, no deleterious effects can occur.

In the construction of an amalgam, two changes take place, the first being the mechanical, or mixing together of the ingredients; the second the chemical, or hardening of the composition. My *first experiment* was to place metallic mercury in a four-ounce glass-stoppered bottle, and submit it to the gold test, by suspending a piece of gold foil in the centre of the bottle, taking care that it did not come in contact with the sides, and cementing the stopper. I placed it under different temperatures, of from 20° to 130° Fahr. In about thirty-six hours the surface of the gold became coated with mercury, giving it a grey colour. This proved the evaporation of the metal. I then mixed a quantity of the Chicago Refining Co's amalgam, according to their formula, three parts of mercury to eight parts of filings, and subjected it to the same test. The reagent was not sufficiently delicate to produce any perceptible change. Wishing to bring the highest chemical skill to bear upon the experiments, I consulted Prof. Haines, of Rush Medical College, who kindly assisted me. At his suggestion I procured two delicate reagents, the ammonio-nitrate of silver and the chloride of platinum. In preparing the ammonio-nitrate of silver, I allowed thirty grains of nitrate of silver to the ounce of water, and put a small quantity of the solution in the test tube. This was heated, and aqua ammonia added until a precipitate formed. Increasing the aqua ammonia until the precipitate cleared up, I took a quill, and with this liquid wrote upon white paper. After putting the substance to be tested in the bottle, the strip of paper was placed across the mouth of the bottle, and the stopper cemented. Should a vapour arise the liquid would become black. Leaving the bottle for ten minutes, I examined it again and found the writing in plain black colouring. The chloride of platinum produced the same results, but required more time to accomplish it. The rapidity with which the evaporation of mercury takes place depends upon the amount of heat and

the surface exposed, and not upon the quantity of mercury contained in the fillings. Thus a jar containing one quart of water would evaporate the same quantity as a jar of like surface containing a gallon, the latter taking four times longer to empty.

In the following experiments I attached a thermometer to a water bath, and heated to the temperature of the body, 98° to 100° Fahr., to maintain an even temperature. I conducted these experiments in the dark, as the rays of light decompose the ammonio-nitrate of silver. The strips of paper containing the reagent were placed in the mouths of all the bottles, including an empty bottle, which was used in each experiment, to prove there was no mistake.

Experiment No. 2.—Three bottles were prepared. In the first was placed an amalgam filling made from Chicago Refining Company's amalgam, according to their formula. In the second was placed an amalgam filling of like size, containing five grains more of mercury. In the third bottle there was nothing. After a lapse of ten minutes I examined the bottles and found the writing on the paper across the mouth of bottles Nos. 1 and 2 was black, while there was no discoloration of paper in the third bottle.

Experiment No. 3.—A repetition of No. 2, with the exception of the reagent chloride of platinum being substituted for the ammonio-nitrate of silver. The results were the same in both. The time required for the latter being ten hours, while but ten minutes were required for the ammonio-nitrate of silver. In conducting the remainder of the experiments, the ammonio-nitrate of silver was employed, it being the more delicate reagent, consequently producing a more marked impression, and also consuming less time than chloride of platinum.

Experiment No. 4.—Two bottles were prepared. In the first bottle were placed scraps of amalgam six months old. In the second there was nothing. In ten minutes the writing on the paper was black in the first bottle and uncoloured in the second.

Experiment No. 5.—Bottle No. 1 contained amalgam fillings which had remained in the teeth from two to ten years.

Bottle No. 2 was empty. The results in both being the same as in experiment No. 4.

Experiment No. 6.—In bottle No. 1 I put an amalgam filling which had been in the mouth sixteen years. In bottle No. 2 there was nothing. At the end of twenty-four hours I found the paper discoloured in the first and not in the second.

Experiment No. 7.—To demonstrate that nothing in the composition of the fresh filings could cause the discoloration, I allowed some filings to remain sealed in the bottle for twenty-four hours. At the end of that time discovered no signs of colour on the paper.

Experiment No. 8.—I procured four preparations of mercurious vivus.

No. 1 contained $\frac{1}{10}$ gr. mercury to 1 gr. of sugar of milk.

No. 2 " $\frac{1}{100}$ " " " "

No. 3 " $\frac{1}{1000}$ " " " "

No. 6 " $\frac{1}{1000000}$ " " " "

A small quantity of each of these preparations was placed in bottles marked 1, 2, 3, 4. In No. 5 there was nothing save the reagent. The effect was alike in each of the four bottles containing the mixture. Those having the greatest quantity of mercury caused the deepest colour to the paper and required less time. As before, No. 5 was unaffected.

In order to determine the difference, if any, in weight, after evaporation, I obtained strong glass tubes one half inch in length and one fourth inch in diameter, and packed them carefully with amalgam fillings. Allowing twenty-four hours for hardening, I weighed them, and at the end of three months I again weighed them, finding in some no change at all, and in others an increase of weight. This is accounted for by the fact that oxydation and accumulation of moisture on the amalgam equalled in some and exceeded in others, the loss of weight by evaporation. I am in possession of numberless cases of poisoning from mercury in amalgam fillings. I will mention but one, and report one case from my practice.

The 'Dental Register,' January, 1872, has the following

case of poisoning from mercury in a tooth filling :—" John T. Smith died from salivation, caused from having a tooth filled with amalgam. Dr. Sprague attended the case, and afterwards called Drs. Davis and Buffin, all of whom agreed that he was suffering from the effects of mercury present in the amalgam used in filling one of his teeth. The filling had salivated the unfortunate man, and as the inside of his mouth, throat and windpipe swelled, respiration was hindered, and finally ceased altogether. Dr. Davis made the post-mortem examination in the presence of the coroner and jury of inquest, opening the chest, taking out the lungs, and extracting the filled tooth. No signs of any other diseases were found, except that caused by the mercury, and it was made clear to the jury by the doctor that this caused his death. The jury returned a verdict that the deceased came by his death by suffocation, caused by inflammation of the glands and infiltration of the tissues of the neck, producing closing of the trachea by pressure thereon ; ' and we further believe that the above causes were brought about by the action of mercury used in filling the second molar tooth of the right side of the lower jaw, by Dr. E. D. Keef, Marysville, Kansas.' "

A case in practice: A lady from one of the towns in Illinois came to Chicago for treatment, having been troubled with dyspepsia and nervous debility for two years. While under the physician's care she complained constantly of a peculiar feeling and taste in her mouth. The doctor suspected the trouble might arise from a rubber plate which she had worn for four years, and advised her to consult me. Upon examination, I found a full upper plate, composed of rubber, and on the lower jaw the molars were gone, except the second and third upon the left side. In the crown of the wisdom tooth was a large amalgam filling, and also one in the crown and posterior approximal surface, extending to the free margin of the gum in the second molar. These had been inserted about two years previously. I noticed that the gums and the mucous lining of the mouth and salivary glands were quite tender. There was a strong metallic taste in the mouth, and a metallic odour to the breath. She had a

peculiar sensation of paralysis in the left side of the tongue, which she had experienced for two years. She also informed me that the saliva flowed so freely that at night her clothing and pillow were saturated, and estimated the loss of saliva each night to equal one pint. I suggested the removal of the amalgam fillings and rubber plate and substitution of gold. She assented to the proposition, and as early as possible I undertook the operations. Upon removing the amalgam fillings and applying the rubber dam the saliva flowed in streams, completely saturating several towels. After refilling the teeth and inserting a gold plate the unpleasant sensation in the tongue and the metallic taste disappeared. At the end of two weeks the glands were greatly improved, and the soreness under the tongue (of which she had complained at her first visit) was healed.

(To be continued.)

COLONIAL DENTAL LEGISLATION.

By T. BERKS HUTCHINSON, L.D.S.I.

THINKING your readers may be interested in what we are doing in South Africa, I beg to enclose you a copy of a petition that was presented by myself and Messrs. Geo. N. Lindup (of this city) and Nicoli Jas. D. Gordon (of the Paarl), both members of our profession, on the 11th of February last, to His Excellency the Governor.

I am happy to say that we have received a favorable reply. Since February, 1879, the Colonial Government has recognised the Dental profession, having granted the first license to Jas. Bell, Esq., L.D.S. Eng. (1860), of this city, through whose importunities the Medical Board consented to recognise the diploma of the L.D.S.

At that time I was not a L.D.S., but being well known by all the members of the Medical Committee I made a formal application, enclosing my registration certificate,

pointing out the right of all registered Dentists to practise Dentistry in any of Her Majesty's possessions, providing they had not committed any misdemeanour.

My application was granted, and in due course I was gazetted to practise as a Surgeon Dentist.

Since then, through my importunities, nearly all our colonial Dentists have, on application, been licensed, and our names appear as "licensed Dentists" along with the medical practitioners and chemists published every six months. I hope when the Medical Act is revised next session of Parliament a clause will be added affecting Dentists, and making compulsory registration law.

PETITION.

"To His Excellency Sir Hercules G. M. Robinson, G.C.M.G., Governor and Commander-in-Chief of the Colony of the Cape of Good Hope.

"The petition of the undersigned residents of Cape Town and other centres of population. That petitioners, both by reason of personal experience and otherwise, have come to the conviction that the Dental profession is one of vital importance, and as such that due protection should be afforded to the public in regard to the acts of those who exercise such functions in this colony. That proper laws have been passed by the Imperial Government, by which a guarantee of qualification in the profession, founded upon proper examination, is established. That a medical congress has been recently held in London, at which no less than 3000 medical men from all parts of the world were present, and Dental Surgery received international recognition as an integral part of the medical profession. For these few cogent reasons, irrespective of so many others, which, it must be evident, could be advanced, petitioners apprehend that it is most desirable that the attention of this Government should be directed to the subject with a view of legislative action being taken thereon, and petitioners accordingly most humbly pray that it may please your Excellency to take such steps as will secure, by an Act of our colonial legislature, the safeguard which exists, not only in the mother country, but also in other British colonies, so essential for the Dental profession as well as for the safety of the persons requiring treatment residing and being in this part of Her Majesty's possessions in South Africa.

"And petitioners, as in duty bound, will ever pray."

British Journal of Dental Science.

LONDON, MAY 15, 1882.

ANOTHER WARNING.

WE have had to record (p. 437) another death from one of those most lamentable accidents which from time to time occur, and reminded us how closely our profession is allied to that of surgery, and the necessity of technical education. Whilst not wishing in the least to add to the anguish that must have been already experienced by the practitioner under whose manipulation it unfortunately happened—with whom we deeply sympathise—we cannot help remarking that it once again points to the advisability of a surgeon *always* being *present* during operations under nitrous oxide gas, even if he is not himself the administrator. Had a medical man been in the room on this unhappy occasion there would have been the possibility that by prompt action, and possibly performance of tracheotomy, the life of the little patient might have been spared. It is true in this instance the operator had taken the precaution of not being alone, and that the accident which did take place so seldom happens that it is practically lost sight of. In such a case no one would be more thoroughly surprised than the operator himself, but the bare fact that such a possibility exists is sufficient to show the absolute necessity of having qualified help at hand. We say “qualified” advisedly, because under such circumstances, where a few minutes’ of most precious time (lost whilst a medical man is being sought) may mean the difference of life and death, many a Dentist under such circumstances could perform efficiently, if roughly, the operation of tracheotomy, but if his efforts

failed to save life—however well meant—what terrible responsibilities might he not incur. We are glad to see our contemporary ‘The Lancet’ point out that this case must not be spoken of or considered as a “death from nitrous oxide gas.” We also agree that “it is well that the notion should not get abroad amongst the public that this accident is more common when ‘gas’ is given than without;” but we dare not shut our eyes to the fact that in almost every case of a tooth slipping from the forceps when a patient is in full consciousness it would be discovered and immediately ejected. Hence the greater liability to dangerous results during the partial consciousness of the sufferer. Three lessons are pointedly marked by this untoward event. Firstly, the undeniable advisability of a medical man always being present during the administration of, and operations under, anæsthetics; secondly, the necessity of the operator being *certain* that he has removed from the mouth each tooth or stump extracted before he attempts to touch any others; and, thirdly, that it is always wiser to do a little well than attempt to run risks by trying to do too much in too short a space of time. The motive that prompts one to do all, if possible, during one administration is a genuinely honest one, indeed a praiseworthy one, but its practicability must be judged by each individual case, and should always be tempered by cool discretion. In the report of the inquest it is simply mentioned that “the tooth was impacted, roots upwards, firmly in the larynx;” although not so stated it is probable that it was a wide-spreading fanged tooth (temporary lower molar), with the roots partly absorbed, so that once it had entered the larynx—crown downwards—the sharp edges of the absorbed fangs acted like barbs, so that the action of coughing could not have the effect that might usually be hoped for. It was a double misfortune that this particular description of tooth should have been the one to be swallowed. In a second case reported (p. 438) the accident appears to have been the same, but the circumstances and results very different. The operator and patient in this case must feel thankful that they have had such a providential escape.

Manipulative Miscellany.

“WEE WEE WONDER VULCANIZER.”

WE have seen an exceedingly handy little vulcanizer, introduced under the above expressive name. It is certainly one of the most compact little machines we have ever seen, consisting of a copper or bronze boiler two inches and a quarter deep by four inches and one eighth diameter, inside measure; the metal is thick, and its strength we should think undeniable. It will hold two small flasks, or one large one, and has a domed iron lid held in position by one strong central screw passing through a hinged bridge. Instead of a safety valve it is furnished with the—to our thinking—still safer fusible plug. The lid carries the tube, or rather a deep hole drilled in a block cast for the purpose, for the thermometer, but the machine is easily capable of being fitted with the steam gauge for those desiring this most useful addition. The whole stands on a neat iron frame five inches high, and has a small detached gas burner (a spirit lamp could be used with equal facility). Unlike most small vulcanisers, the temperature with this is easily maintained at one point, we presume from the thickness of the metal.

NEW ETHER AND GAS APPARATUS.

MESSRS. C. ASH & SONS have a new arrangement for the administration of ether with gas that will commend itself for its simplicity to many. We may, perhaps, best describe it by asking our readers to imagine the *neck* of the usual “supplemental bag” to be about two inches in diameter. Within this neck, which is attached to a brass tube of the same size, is a wire basket descending about three inches *into* the bag, and designed to contain a sponge which is to receive the ether. The tube is attached by a closely-fitting cap, having a check-pin to prevent the possibility of its falling off, and

above this is a large box tap, the mouth of which attaches to the bottom of the face-piece in the ordinary manner. When the tap is "off" gas alone is inspired, but when turned on part of the gas has to pass forwards and backwards through the ether sponge before being received into the lungs, and the quantity can be regulated by turning the tap more or less full on. The whole apparatus is no more formidable than that commonly used for gas alone, and its simplicity renders its cost very favorable to the purchaser.

NEW COLOUR OF TEETH.

THEY have also a new colour in teeth of a bluish-creamy tint, difficult if not impossible to describe, but one we have often felt the need of. It is known by them as "B. X. 1," and another, somewhat like it, as "B. X."

NEW POSITION OF PINS IN FLAT TEETH.

THEY have also made flat upper sets of teeth with the pins *very* far from the cutting edges, for use in cases of close bite where the teeth, nevertheless, are long in the enamel. These teeth are also very thin in substance so as to avoid undue prominence at their necks.

Another alteration of pins is with narrow canines, in which the pins are placed vertically and close together, a most useful condition for narrow openings.

We understand they have made many additions to their already assortment of shapes and colours, some of which will be further alluded to from time to time.

NEW GOLD FORCEPS.

MR. RUTTERFORD has a new pair of "gold forceps", which might lie before an operator long before he would notice

anything different from those so long in use, but once let him handle them and his attention would be attracted at once to their extreme lightness. This is owing to their handles being struck out of thin sheet steel to the usual form, giving them plenty of bulk for handling with steadiness, and at the same time quite as much stability as though they were solid.

NEW TAPE FORCEPS.

HE has also some light forceps like the usual "artery forceps," except that the teeth at their extremities are rather longer and overlap more. These easily grip a corundum tape and keep it vertical, and make a useful handle for the inside end of the tape when using. They are also very useful for gripping ordinary tape to draw between the teeth for separating them.

Literary Notices and Selections.

INCIDENTS OF PRACTICE BROUGHT BEFORE THE NEW YORK ODONTOLOGICAL SOCIETY.

DR. BENJ. LORD.—I saw to-day a lady whose superior incisors and canines were filled with gold twenty-eight years ago, and though the cavities were quite large, and she was then only twelve years old, the teeth are perfectly preserved. Such a case of unusual success may very properly excite our curiosity, and lead to inquiry as to the cause.

Besides the perfect placing and impacting of the gold, and the nice finishing of the edges of the filling, the necessity of which must be acknowledged, I believe the durability of the work has been due to the shaping of the teeth so as to

leave free spaces, yet with a point of contact at the cutting-edges. This shaping made the spaces self-cleansing.

It was formerly my practice to wedge the teeth apart preparatory to filling. Now, and for a long time, I have felt that it was far better to cut away the approximal surfaces so as to secure such a space as I desired to leave after the teeth are filled. If further space is required for the operation of filling I get it by wedging.

I believe that the cause of much failure is the practice of wedging from the beginning to get space for filling, after which the teeth fall together again, and further decay will be almost certain to occur, as at least one of the conditions that favoured it in the beginning is not removed.

In the treatment of the approximal surfaces, I think we must make provision to secure such free spaces as for the most part will be cleansed by natural causes, for we cannot depend upon our patients keeping their teeth clean on these surfaces.

Dr. J. W. CLOWES.—That is righteous doctrine but it is not popular.

Dr. J. MORGAN HOWE.—After Dr. Arthur's book was published I became convinced, for a time, that the separation of teeth was desirable, and I practised it to a limited extent, and very cautiously, treating some teeth in some mouths as nearly as I could after the manner recommended by him. I carefully watched the cases in which I had so acted, and after a lapse of two or three years, and by further cautious experiments in that direction, came to the conclusion that this treatment of the incisor teeth was certainly judicious in some cases, but my experience with the bicuspid and molars was not favorable to that method of treatment. I not only treated some other persons' teeth—their bicuspid and molars—in that way, but I had one or two in my own mouth thus separated. The operation was not successful either in preventing recurrence of decay or in giving me comfort, and I submitted to an operation last summer that was very tedious and exhausting, in order to have the contour of those teeth restored. My experience with incisor teeth has been rather favorable, where dis-

cretion is used in selecting cases, but bicuspid and molars should not, according to my experience, have their contour destroyed.

Dr. DWINELLE.—It is a maxim that we learn more by our failures than by our successes. I have to report a failure. To-day a lady came to me, for whom a year ago I filled a large number of teeth. Her teeth were exceedingly sensitive to inhalation of air, and to cold water also. I treated them in the method I have reported several times before this society, with chloride of zinc, applying it with a heated instrument. This treatment has been very successful in nearly all cases. She came to me recently, however, with one tooth that had given her much trouble. It was a superior twelfth-year molar, on the left side, having a cavity in the posterior approximal surface. It was exceedingly sensitive, and ached so frightfully that I could hardly do anything with her. The tooth resisted treatment so long that I came to the conclusion I would destroy the pulp, and was not opposed. It was either that or remove the tooth. I destroyed the pulp, removed it, medicated the pulp-canals, let the tooth remain for several days, and then filled the canals to their extremities. The tooth had three roots, though they were nearly united in one. She came to me early this morning suffering beyond expression. I made a series of external application, but with no effect. I finally treated with chloroform. This afternoon she came back, and I must confess that in all my practice I never witnessed such exquisite and excruciating suffering. She entreated me to remove the tooth. I did so, though against my wish. I found these aggregated roots cemented together so that I could hardly trace the outlines which would express the treble form. I cut the tooth open, and found that I had filled the roots perfectly to the foramina. I expected to find the pericementum inflamed and highly coloured. To my surprise it was pale and bloodless. I must confess it is a puzzle to me. I believe I have had as much experience as almost any one in the last forty-odd years in treating teeth, and I must confess that the cause of this pain is unaccountable.

Dr. RICH.—Was there any bone on the outside?

Dr. DWINELLE.—No, sir; nothing that would show deposits of secondary dentine.

Dr. BÖDECKER.—There may have been some new formation of bone on the bony wall of the socket.

Dr. DWINELLE.—That might be, I suppose; I only know there was none on the tooth.

Dr. RICH.—I have no doubt that in many cases of that kind, if the socket were examined carefully, small spicules of bone would be found protruding from the walls. I will describe one or two of the cases of that kind that have occurred in my practice. The subject of one of them was the daughter of an eminent physician of this city. Her teeth had been continuously under my care from her childhood. She grew up a fine, healthy, robust girl, with large, regular, fine teeth, which she kept in good order and was very proud of. When she was about twenty years of age she complained of an occasional severe pain in the right superior first molar. She consulted me about the trouble the tooth was giving her, and I made a careful and thorough examination of the offending member, but could not discover any cause for the pain she was suffering. The tooth was perfectly sound, not a speck of decay about it, and not at all sore to pressure or percussion. The application of a current of electricity gave no indications of a dead pulp. The intervals between the periods of suffering became shorter, and within six months after its first appearance it became continuous, and the torture from it was almost unbearable. She could not sleep except when under the influence of narcotics, became extremely nervous and irritable, and the derangement of the system became general. She lost her appetite, and ran down in health and flesh very rapidly, and her condition became a source of great anxiety to her family. During all this time she was under the care of her father, a most skilful physician, who tried every means available to relieve her and enable me to save the tooth. The symptoms were something like those that occur when there are osseous formations going on in the pulp, and with the idea that possibly that might be the cause of suffering, I destroyed

and extirpated the pulp ; no such formations were found in it, and no relief followed the removal of the pulp. I then extracted the tooth. The pain and nervous irritation immediately disappeared, and the patient rapidly recovered her health and good looks. When I looked at the tooth after taking it out, I found a part of the ruptured membrane was still attached to the palatal root ; upon examining this under the microscope I discovered three points of inflammation in different parts of the membrane that remained on the root, about the twentieth of an inch in diameter. With this exception the membrane had the appearance of being strong and healthy, and except in these spots was entirely free from inflammation. From some previous experiences these spots of inflammation, and the general character of the case, suggested spicules in the socket. The day after the tooth was extracted I made a very careful examination of the socket, and found not only the three that corresponded with the points of inflammation discovered with the microscope, but a number of other small spicules in that and the sockets of the other roots. A few months after the extraction of the tooth I have just mentioned, the same symptoms were developed in the first superior molar of the left side. In the case of this tooth, as soon as the symptoms were well ascertained to be identical with those attending the commencement of her suffering, the tooth was extracted, as the patient would not undergo a repetition of the torture experienced with the first one. And by this process this young lady has lost four of her upper molars during the past five years, the first and second molars on each side. As yet none of the other teeth have been affected in that way.

Dr. BÖDECKER.—I do not believe this formation is so very exceptional, because I know when studying alveolar abscess I found several cases where there was a new formation of bone sticking out of the alveolar process. Some of these were quite sharp and pointed, while others were blunt. I know I have seen several of them.

Dr. WM. JARVIE, Junr.—These cases of intense pain from obscure causes bring to mind a case in my hands of a lady

of forty years of age, who had been suffering from neuralgia for six or eight months, and had been under the care of a physician. The pain was felt through the cheek and over the eye and on the side of the head. Her sufferings were intense at times, and she lost some forty or fifty pounds of flesh in the meantime. She told me life had become a burden. Her physician suggested that probably there might be some connection between this pain and the teeth, but she thought it could not be possible, for her teeth were all comfortable. She came to see me on his advice, and on questioning her very closely and examining her teeth, I found a suspicious-looking filling in the second lower bicuspid on the side of the mouth where the pain had been. I removed the filling, which came out very readily, and a little pus the size of an ordinary pin-head exuded from the cavity. This was the seat of the trouble, for in three minutes her pain had disappeared, and she has not had a return of it since. I treated the pulp at that time with warm water and then applied a little creasote; after that I put in some arsenic, destroyed and extirpated the pulp, and filled the tooth. She has never had a return of the pain. Only this afternoon she said her life had been a changed one since that time. In Dr. Dwinelle's case it seems singular that there should have been such great pain, the pulp-canal being cleared out and filled, and there being no inflammation of the periosteum, and yet it may have been caused by spike-shaped nodules on the alveolar process. I have never met with such a case in all my practice, though I have frequently had cases of pulp-stone in perfectly sound teeth, where the pain has been as intense as any pain could be.

Dr. W. T. LAROCHE.—About fifteen years ago I had a case of a second bicuspid, which gave such constant and acute pain that I finally had to resort to extraction in order to give relief. The tooth had a small filling on the grinding surface, which I removed and replaced a number of times without relieving the pain. Upon extraction I found attached to the root of the tooth small spicules of bone like those described by the gentlemen to-night.

Dr. J. L. WILLIAMS (Boston).—In Dr. Dwinelle's case

possibly the sensitiveness to pain might have resulted from a neuralgic diathesis. It reminds me of a similar case in my own practice where that condition seemed to be the obstinately controlling element. It occurred, perhaps, twenty years ago. A man of nervous temperament, who had been very busy in his profession, day and night, for some time, was attacked with severe odontalgia, accompanied by symptoms of brain fever, which made him almost insane. I tried, in vain, all sorts of ways to stop the pain, and, as a last resort, at his entreaty I took out the tooth. I then invited him to have it replaced, but nothing would tempt him to have it back. Since then he has said he would give 500 dollars for that tooth. It was a case of remarkably nervous temperament, much aggravated by excessive brain-work, in which the neuralgic tendency seemed to have taken control. Perhaps the lady referred to might have been of that temperament, and the working on the tooth might have produced hyperæsthesia in that locality, which resulted in the neuralgia.

Dr. DWINELLE.—She is of nervous temperament, but not unusually so. It occurred to me that perhaps the trouble might arise from cold and general congestion. I told her I had cured toothache by a single dose of cathartic medicine, and asked her if she needed anything of the kind. She said she was entirely normal, and there was nothing needed in that direction. There was nothing to indicate it. There were no febrile symptoms, no congestion about the head or eyes, and the pulse was normal.

Dr. W. H. ALLEN.—In connection with the suggestion made by Dr. Williams in regard to putting teeth back after extraction, I will mention a case I had some time ago. A young woman, who had been treated for several days or weeks by some other practitioner for pain in a bicuspid, came to me one Sunday in severe pain, and wanted the tooth out, and mentioned that it had been treated for some time, but nothing relieved her of the pain. I made several applications but could not relieve her, and finally decided to take the tooth out, and did so. I cleansed the tooth, removed the pulp, filled the canal, chamber, and crown, and reinserted it in its original socket, and in about thirty

minutes from the time the tooth was extracted she left the office rejoicing that she still had the tooth and no pain. I have not seen it for some time, but for several months it was doing very well and giving her no pain or trouble. I will mention another case I have been practising upon for some time, trying to save a pulp. A lady came to me, saying she had severe pain in a lower wisdom tooth. I found a large cavity in the buccal side of the tooth stuffed with cotton; removing which exposed the pulp, which was much inflamed and very sensitive. I treated it a week or more, trying to get it into a proper state to be filled, and to-day, when she presented herself, I thought I had succeeded, as she said she had been free from pain for twenty-four hours; but as soon as I removed the temporary stopping intense pain commenced; there was a slight exudation of pus and great sensitiveness to the touch, indeed, it seemed as sensitive as before I had treated it, and I reluctantly resorted to the use of arsenic.—*The Dental Cosmos.*

COLOUR OF ARTIFICIAL TEETH.

By NICHOLAS NOYES.

PROFESSOR OF DENTAL ART AND MECHANISM, BOSTON DENTAL COLLEGE.

I WISH to say a few words in your valuable journal upon what I consider a very important subject, and that is, the selecting of teeth for an artificial denture.

I will ask your readers to examine carefully the mouths of *all* their patients, and observe if they can find *any* mouth where all the teeth *are coloured alike*. Of course the body of the teeth will be of the same colour, unless by some misfortune some teeth have become dead; but I mean living teeth. I will risk my reputation that they will not find in *any* mouth teeth all of the same colour or shading. Now, in selecting teeth for a denture, why should not the same principle be carried out that Nature carries out? And I

answer: Because the manufacturers of teeth make them and colour them in sets all alike, and arrange them in sets; and it is too much trouble to mix a number of sets of single teeth, and impossible to find in pressed block-teeth proper colours. And we wonder why artificial teeth look *so unnatural!* I have looked into this matter for some years, and am convinced, in my own mind, that my premises are correct, to wit: Artificial teeth of the same colour in a set look all of one colour in the mouth, while natural teeth do not. Let any one look at the teeth—artificial I mean—that they see travelling around the streets, and say how many look like anything but crockeryware. I care not how good the adaptation may be, or how well the contour of the features have been restored, if the teeth have not been selected by an artist they will look like anything but natural teeth. Now, if I am right, and I wish to be corrected if I am not, and Dentists will demand of the makers of teeth that they be coloured to correspond to natural teeth, I *think* it will tend to advance Dental art. I have called the attention of a good many to the facts I have stated, and found so many to agree with me, that I wish to extend broadcast a little seed in the right direction, which I hope may bear fruit. It at least will provoke discussion; and that will demonstrate whether I am right or not.—*Ohio State Journal*.

MY STRUGGLE WITH CHLOROFORM: WAS SHE DEAD?

By Dr. J. H. SIDDALL, Canton, Ohio.

ON the morning of the 22nd of December, 1881, a young lady, a teacher in the east division of our Union Schools, presented herself, in company with her physician, for the purpose of having twelve upper teeth extracted while under the influence of chloroform. The lady was delicate, but full of ambition, and of a very nervous temperament, and about one hundred pounds in weight. The doctor drew from his

pocket a single ounce of ether. I remarked to him that as she had so many teeth to extract, and with his way of using anæsthesia (on a napkin in a cone made from a newspaper), that an ounce would be entirely insufficient; and he went for more, as I supposed, *ether*. Returning, I placed the patient reclining, and taking my place by her side held her pulse while he proceeded with the ounce of ether. Nothing unusual followed, except the uneven progress to sleep, which always follows the uneven administration of any anæsthetic. This often results from removing the napkin and dashing on it more chloroform, or from disturbing otherwise what should be a quiet sleep, in which this patient had been instructed to try and participate. But *here, right here*, the powerless form that had confided in, and paid for, the skill of an expert, is strangled for want of uniformity of administration, and is poisoned with the reinhalations from the lungs. More than once in the past twenty years have I taken from the unskilled hand of my *superior* the messenger of death, and with *ether* and *pure air* won an untold victory. But pardon my digression. To my story: The ounce of ether having been consumed, the other bottle (chloroform) was applied, and about one fourth of an ounce being given on the same napkin, I noticed her condition, and it looked favorable for the operation, and I began with a curved-handled bicuspid forcep. I removed all the upper teeth with great rapidity, without a break or wavering. As I laid hold of the last one, a molar, I saw her turn up her eyes, and go down; and heard her physician say, "She is gone?" "No; *she's not!*" I cried, and quickly grasping her, placed her on her back, flat on the floor, directing the doctor, with all speed, to get me some ammonia. I began to *pump* both arms, moving them up and down, and out, and to her sides, thus producing artificial respiration, at the same time directing a lady present to drop cold water gently upon her face, and with the addition of the grateful ammonia, in one nostril at a time, and the occasional lifting up and dropping of the head quickly, to keep up the motion of the blood, after a long twenty minutes, of the most faithful work and the greatest anxiety I ever experienced, I saw a slight

colouring of blood appear in her cheek, and again a motion of the eye when the water fell, and the *victory was mine!* During these awful twenty minutes no sign of life was perceptible; and to those who were present and aided me in my fight, she was dead. A little brandy, and an occasional smell at the ammonia followed; and in two hours she walked home.—*Ohio State Journal.*

DEATH FROM CHLOROFORM.

DR. DUJARDIN-BEAUMETZ related, during the discussion on chloroform which has now lasted so long at the Académie de Médecine, an account of a death from it, this being the third death from chloroform which has taken place since the discussion commenced. It occurred in the person of a man who was in a perfect state of health with the exception of an attack of sciatica. For some time past Dr. Dujardin-Beaumetz has for this affection employed forced subcutaneous extension, flexing the thigh upon the trunk (complete resolution having been obtained by chloroform), so that the foot of the patient is brought close to his head. In this case he administered the chloroform intermittingly on a compress, and the patient had not inspired ten grammes when he carried his hand violently to his head, became of a violet colour, ceased to breathe, and died. The chloroform employed was that of the hospital, and the patient had nothing the matter with his heart, and was, in fact, quite well except for the sciatica.—*Med. Times and Gazette.*

IODOFORM AS AN ANTISEPTIC.

Dr. MIKULICZ has recently published in the 'Berliner Klinische Wochenschrift' a paper in which he discusses the uses of iodoform in surgery, and sums up as follows. 1.

Iodoform is an excellent remedy in all conditions in which the direct application of an antiseptic to a wound is required, and in this matter deserves to be preferred to all other means at present in use. 2. Lister's carbolic gauze dressing may be completely replaced by iodoform dressing, which has the additional advantage of being simple and certain. 3. Iodoform dressing ensures an aseptic course to wounds, even in conditions where it has not hitherto been possible to carry out antiseptics strictly. 4. In cases of wounds and ulcers which have already become septic, iodoform acts, as a rule, more rapidly and certainly than other antiseptics, and does not irritate the tissues. 5. Iodoform acts as a specific on syphilitic, tuberculous, scrofulous, and lupous infiltrations. Dr. Zeissl relates in the 'Allgem. Wiener Med. Zeitung' two cases in which toxic symptoms—erythema, fever, and albumen and iodine in the urine in one case, urticaria and iodine in the urine in the other—followed the application of iodoform after operation. The quantity used, however, is not stated. —*British Medical Journal*.

ACUTE ALVEOLAR PERIOSTITIS.

THE 'Lancet' says it is as interesting to surgeons in general as it is instructive to Dental Surgeons in particular, to notice the active treatment of the above very common malady. To take a typical case:—A young lady of prepossessing appearance, moving in good society, has, after an attack of pain, a sudden swelling in the region of the lower bicuspid teeth, very disfiguring by its bulk, and suspiciously red on the cutaneous surface. Her anxious mother at once sends for a surgeon, perhaps a specialist in oral surgery, who examines the case and very properly refers it to the family Dentist, advising, however, instant extraction of the offending tooth, but not attempting to open the abscess, though he takes care to say that unless the tooth is removed the abscess may even open spontaneously on the skin, and cause

an ugly scar. All this, no doubt, is correct theoretically, but practically the surgeon would help affairs very much if he would at once open the abscess internally, and in nine cases out of ten the tooth can afterwards be saved; as the Dental Surgeon well knows that no cases of teeth with dead nerves are so easily or so successfully treated as those in which a free discharge of the suppurating contents has been established on the gum surface.

BLOOD-DISCS IN A CASE OF HÆMORRHAGIC DIATHESIS.

A MAN was under my observation for some years as a sufferer of prolonged bleeding, from the slightest cut or scratch. In the end he became subject to frequent and very obstinate bleeding from the nose. In spite of treatment, the dribbling of blood from the nostrils would continue for days; and the constant attacks at length utterly exhausted him and he died. On placing some of his blood under the microscope, I noticed that the blood-discs were very thin, although they were of the normal diameter. Indeed, the discs were not more than half the thickness of the normal ones, and the central depression of the ordinary disc was hardly to be seen. The thinning was evidently at the circumference of the blood-corpuscle. Whether this condition of the blood be a cause or an effect of the hæmorrhagic diathesis, is left for future observers to determine. I do not know that it has ever been noticed before.—FRED. W. P. JAGO, M.B. Lond., Plymouth.

PROSECUTION OF QUACKS.

“DR.” TOMANZIE, “a coloured gentleman,” has been sentenced to two months’ imprisonment for giving false

certificates of death. He has, under the shelter of an "Artisans' Medical Society" (which is supposed to have no real existence as a society), been carrying on a lucrative practice in Liverpool; and his unlawful career might have continued had it not been for the action of a number of medical men, who formed themselves into a "Medical Defence Association" for the purpose of prosecuting him. Tomanzie is well known in Derry, where his fame reached a higher pinnacle before the collapse came than it had attained in Liverpool. It is strange that whilst the law protects the poor from bad food and from bad drink, the greatest impostors are allowed to parade themselves as medical men before the public, and to dupe their victims to the utmost. Liverpool is at the present time flooded with quacks, whilst their doings, that sometimes involve the lives of their patients, are common themes of conversation amongst the profession.—*Med. Times and Gaz.*

THE dietary of 2000 A.D. is thus prognosticated by Dr. Milner Fothergill:—"The younger portion of their listeners would look up and inquire—'Had they teeth to chew such food?' in sceptic tones. (It was curious to hear such an inquiry come from betwixt the most even and regular teeth. On looking closer, it was seen that not a speck of decay disfigured their beautiful teeth. But it was also to be seen that all the teeth were artificial—absolutely all. The Dentist had nipped off every crown as soon as the tooth had ceased growing, to prevent the teeth becoming carious; and so saved the roots in the jaw, upon which were fixed false teeth. Such plan had been found the only practicable method of preserving the mouth from deformity and disfigurement.) Then the aged persons shook their heads ominously, and replied—'Ay! they had teeth of their own in those days! Folks died with some of their teeth still sound—even at fifty. They were a different kind of people then to now!'"—*The Dental Record.*

Dental News.

ODONTOLOGICAL SOCIETY OF GREAT BRITAIN.

ORDINARY MONTHLY MEETING, HELD 1ST MAY, 1882.

S. LEE RYMER, Esq., L.D.S., President, in the Chair.

ON taking his seat the President reminded the members that since their last meeting the world had lost an eminent worker in the field of science. Although Mr. Darwin had passed away at a ripe age, and had left in his works a precious legacy, highly valued throughout the civilised world, still they could not help regretting that these well-directed and fruitful labours had come to an end; and the Council had deputed him to propose that the Society should give expression to this feeling by sending a message of condolence to the widow and family of Mr. Darwin. This was at once agreed to.

Mr. HENRY SEWILL showed a lower molar, which looked as if a longitudinal section had been made through one of the roots, the crown being intact. The tooth was in the same condition when extracted, the missing fragment being removed separately. The patient had not met with any accident, and no cause could be assigned for the fracture.

He also showed the lower first molar of a boy, aged six, having a large cavity in the posterior surface, into which part of the crown of the second molar had fallen. Mr. Sewill extracted the first molar, and the second came out with it; he at once replaced it, the tooth soon became firm, and no harm appeared to have resulted. A similar accident had occurred twice before in his practice; in one of these cases the accident only spared the necessity for a second operation, whilst in the other the tooth was replaced at once and did well.

In 1874 he had mentioned at one of the Society's meetings, the plan of drying cavities by the use of absolute alcohol. He had since continued the practice with very satisfactory results, and was induced to mention it again because he did not think it was as generally known as it might be. Of late he had used ordinary strong rectified spirit instead of absolute alcohol, and found that it answered the purpose very well; it had the advantage of not blistering the lips and tongue if they were accidentally touched by it.

Another point, on which he was desirous of ascertaining

the views of members generally, was whether or no it was wise to extract the teeth of pregnant women. Such patients were constantly coming for advice and to be relieved of pain, but when extraction was proposed, it being evident that the tooth was past saving, one was met with the answer that the patient's doctor did not consider that it would be safe for her to undergo the operation in her present condition; so the patient continued to suffer, and her strength was reduced by the pain. His own practice was, in the early stages of pregnancy, to give gas and extract the tooth; even if the patient was weak and nervous he believed that the slight shock of the operation did less harm than the exhaustion produced by long-continued pain. In more advanced cases one must be guided somewhat by circumstances, but in most of these even he believed that extraction did no harm.

Mr. CHARTERS WHITE said that with regard to the removal of two teeth instead of one, the accident had occurred four times in his practice. In each case the left lower second bicuspid had come out with the first left lower molar, the latter being the tooth he intended to extract. He had always replaced the bicuspid at once, securing it temporarily with a silk ligature, and the cases had all done well.

Mr. COLEMAN and Mr. S. J. HUTCHINSON said they had each of them met with this accident once, and the latter asked Mr. White and Mr. Sewill whether they thought that the teeth they had replanted had maintained their vitality?

Mr. CHARTERS WHITE replied that it was difficult to judge what the condition of the pulp might be, but so far as appearance and sensibility went these teeth did not differ from those which had not been disturbed.

Mr. SEWILL said that of course he could not be certain that the vessels had re-united at the apical foramen, indeed he thought it more likely that they had not, but there could be no doubt that the periosteal vessels had re-united, and these appeared to be quite sufficient to maintain the vitality of the tooth.

Mr. STOCKEN said he had found alcohol a very useful application to cavities and root canals; instead, however, of using absolute alcohol his plan was to mix ordinary strong rectified spirit with carbonate of potash in a stoppered bottle. The carbonate, having a strong affinity for water, abstracted it from the spirit, and although the result was not absolute alcohol, it would be found quite strong enough for this purpose.

Mr. COLEMAN said he had found the spirit very useful for

drying cavities; it also rendered any saliva which had gained entrance less viscid and more easily removable.

Mr. F. CANTON said he had frequently been asked as to the advisability of extracting teeth during pregnancy and he never hesitated to answer in the affirmative. He always preferred to give gas in such cases and took care to give it thoroughly. He had never seen any harm result from the extraction of teeth under these conditions.

Mr. COLEMAN said he never hesitated to operate in such cases when an operation was really necessary. Long-continued pain might of itself produce a miscarriage, and the shock of an operation performed without gas might in some patients produce the same effect. He therefore thought it best always to give gas.

Mr. F. H. WEISS said he always had a fear in such cases lest the mental impression upon the mother should produce deformity in the child; Was there no danger of this?

Mr. STOCKEN replied that he had been assured by an eminent accoucheur that there could be no danger of producing deformity in the child after the mother had passed the period of quickening.

Mr. LLOYD WILLIAMS mentioned a case in which he had been blamed because his patient was prematurely confined a day or two after an extraction under gas; the operation had been perfectly painless.

Mr. SEWILL said that ignorant people were very apt to confound *post hoc* with *propter hoc*, and to say that such an accident was due to the operation when it was really due to the antecedent nervous disturbance, and to their own neglect in not applying for advice sooner. At the same time it was no doubt true that some women were very liable to miscarry on slight causes, or with no apparent cause, and if there was evidence of such a tendency it would be right to act with great caution.

Mr. W. T. HENRY showed a model of the mouth of a child, eight years of age, in which the lower incisor teeth impinged upon the necks of the upper incisors on the lingual aspect, causing the latter to project forwards in a most remarkable and unsightly manner. Taking into consideration the fact that his patient was a most troublesome and refractory child, he thought the best thing to do would be to cut off part of the crowns of the lower incisors, extract the canines, and then draw in the upper incisors.

Mr. STEELE described a plan of treating such cases which he had followed with very satisfactory results. It consisted in gagging the front of the mouth by fitting a gold or vulcanite plate for the lower incisors to strike against, so

arranged that when the jaws are closed the molars are clear of each other. The tendency of teeth being to advance if they have no antagonists, it would be found at the end of three months that the space between the molars would have disappeared, so that they meet even when the plate is in position, and that when the plate is removed the lower incisors no longer strike upon the upper; the latter must, of course, also be drawn back.

Mr. S. J. HUTCHINSON was of opinion that less active measures than those proposed by Mr. Henry would probably answer his purpose. He thought that if he could persuade the father to wait until the child was twelve years old, and the permanent molars were in position, he would find that the deformity would by that time have become much less marked. He might then remove the first bicuspid and draw back the incisors.

Mr. HENRY said he was very much obliged to Mr. Steele and should certainly be disposed to try his plan, though he feared he should not be able to get his unruly patient to wear the plate for any length of time. As for Mr. Hutchinson's suggestion that nothing should be done until the patient was twelve years old, that was out of the question. The case had been getting rapidly worse during the last eighteen months, and he had no expectation of any improvement taking place except as the result of treatment.

The PRESIDENT then called upon Mr. Steele to read his paper on "The Connection between Mechanical Injury and Caries of the Teeth."

Mr. STEELE was of opinion that the influence of mechanical injury of the teeth as a cause of caries, although mentioned by several writers, had not generally received the attention which its importance required. Various chemical and vital theories had been put forward and fully described, but without denying the importance of chemical and physiological changes, he believed that mechanical injury was the most frequent and the most direct cause of the mischief. The generally received opinion was that the exciting cause of caries was an acid condition of the fluids of the mouth, producing decomposition of the earthy salts which entered so largely into the composition of the dentine. Most authorities held also that enamel was not liable to caries, and it seemed probable that so long as it remained perfect it would serve to protect the dentine also from the ravages of this disease. But the enamel was so liable to injury from various causes, and at so early an age, that it was rare to find teeth in which this structure was not more or less damaged, though not always so much so as to render it

useless as a protective armour. If, then, the enamel should happen to be imperfect, whether from congenital deficiency, or as the result of concussion, or from being unfairly used, the acid fluid would obtain access to the underlying dentine and serious results would follow.

The practical deduction from this view of the subject was that more pains should be taken to impress, more especially upon young people, the importance of not abusing their teeth. They should be assured that in subjecting these organs, which appear to them to be so hard and strong, to all sorts of rough treatment, they are laying up for themselves serious trouble in the future. He felt sure that the spread of a better knowledge of the evils of maltreatment and the consequent exercise of greater care, would be followed by a perceptible diminution in the ravages of Dental caries.

A discussion ensued in which the President, Messrs. Charters White, F. H. Weiss, H. Sewill, F. Canton, and Stocken took part. Mr. Steele having replied, the President announced that at the next meeting (June 5th) a paper would be read by Mr. Hunt, of Yeovil, on "Celluloid."

The meeting was then adjourned.

NATIONAL DENTAL HOSPITAL.

THE annual Distribution of Prizes to the Students of the National Dental Hospital and College will take place at the Beethoven Rooms, Harley Street, on Wednesday evening, the 31st inst. Lord Viscount Enfield, President of the Hospital, will preside.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

MR. GEORGE JOHN LUCAS, Blackheath, passed his first professional examination for the license in Dental Surgery, and Mr. James Lindsay, Edinburgh, passed his final examination and was admitted L.D.S.

WE are requested to state that H. A. Murphy, Esq., of Bolton, passed for L.R.C.P., L.R.C.S., and L.M., at an examination held at Edinburgh on the 28th April and 2nd May.

THE 'Dental Record' says, "We have been favoured with the written and some of the *viva voce* questions at the

recent First Professional Dental Examination at the Royal College of Surgeons of Edinburgh.”

The written questions were :

Anatomy.

1. Give the structure, form, and attachments of the Diaphragm ; mention the position of the Foramina, and what passes through these foramina.

2. Give the Anatomy of the Tongue, its connections with other structures, the source from which its nerves and blood-vessels are derived, and the functions of its several parts.

3. Describe the origin, course, and relations of the Common Carotid Artery on each side of the neck.

Physiology.

The Constituents of the Blood, what are the changes which take place during coagulation, and the causes accelerating and retarding it?

Chemistry.

1. Explain or describe the phenomena of efflorescence and deliquescence ; mention some of the substances that are most liable to one or other of the changes.

2. Mention the chief points of difference between Arsenic and Antimony when submitted to March's process ; specify the character of the gases liberated, and of the stains on porcelain.

3. What is a Thermometer ? Explain its construction, and the difference between Centigrade scale and that of Fahrenheit.

The following were some of the *viva voce* questions :

Anatomy.

What is the Pharynx ? and asked to name the muscles entering into its formation.

How are the Anterior and Posterior Pillars of the Fauces formed, and what structure lies between ?

The Muscles of Inspiration, and the changes which take place during inspiration and expiration.

The attachments of the Intercostal Muscles.

Given the Humerus, and asked to name the muscles attached, and to which side it belonged ; to specially state the muscles which would flex and extend the arm, and to give their attachments.

Given the Scapula, and asked to name its processes, angles and borders, and the muscles attached.

How is the Supra-scapular Notch formed into a Foramen, and what passes through it ?

To name the branches of the External Carotid Artery, and the course of the Internal Carotid Artery.

The Inferior Maxillary Bone, its processes, borders, and surfaces, and the muscles attached.

Chemistry.

How would you detect the presence of Carbonic Acid in the air, and in a well?

Whether the air was a chemical compound or a mechanical mixture.

How many parts of Oxygen and Nitrogen in the air?

How would you obtain Nitrogen from atmospheric air, and what combinations would be formed with the Oxygen.

The combinations of Nitrogen with Oxygen, and give their symbols.

How are Acids, Basic and Neutral Oxides formed? Give examples of each.

How would you detect if Lead were mixed with a substance?

Physiology.

The changes which take place in the Blood during inspiration and expiration.

The Circulation, how the Blood enters the heart, and leaves it. The diastole and systole of the auricles and ventricle; the difference between Arterial and Venous Blood.

Two out of three candidates were referred to their studies.

FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.

At the April sittings of the Examiners, held on 18th, 19th, and 20th of that month, Mr. Charles Barrington Stoner, D.D.S., was admitted a Licentiate in Dental Surgery.

Two candidates were remitted.

APPOINTMENTS.

ALLEN, JOHN, L.D.S.R.C.S.I., of Manchester, has been appointed Honorary Dental Surgeon to the Hulme Dispensary, Manchester.

WEISS, Mr. WILLOUGHBY, has been appointed Lecturer

on Dental Surgery to the National Dental College, vice Mr. Oakley Coles, resigned.

Correspondence.

[We do not hold ourselves responsible for the opinions expressed by our Correspondents.]

PRIZE FUND FOR THE EDINBURGH DENTAL SCHOOL.

To the Editor of the 'British Journal of Dental Science.'

SIR,—A general desire having been expressed by the Dental Licentiates of Edinburgh to mark their appreciation of and esteem in which they hold the diploma, it is thought they cannot better give expression to that appreciation than by helping to establish a fund for providing an annual prize to the most proficient student or students in the school.

The following sums have already been promised, and I shall have much pleasure in adding the names of other gentlemen in sympathy with the movement. Mr. MacGregor, 20, Queen Street, Edinburgh, has kindly consented to act as treasurer.

It is proposed to leave the administration of this fund in the hands of the Senior Dental Staff of the school.

I am, &c.,

WALTER WHITEHOUSE.

50, Parliament Street, London, S.W.

	£	s	d
MacGregor, M., Esq., L.D.S. Ed. . . .	6	6	0
Walker, Dr. Joseph, L.D.S. Eng. . . .	5	0	0
Holland, J., Esq., L.D.S. Eng. and Edin. . . .	3	3	0
Macleod, W. B., Esq., L.D.S. Ed. . . .	3	3	0
Wilson, A., Esq., ...	3	3	0
Watson, G. W., Esq.	3	3	0
Whitehouse, Walter	3	3	0
Finlayson, M., Esq.	2	12	6
Matthews, C., Esq.	2	2	0
Cormack, E. A., Esq.	2	2	0
Mackintosh, J., Esq.	2	2	0
Crombie, Peter, Esq.	2	2	0
Greenfield, John, Esq., L.D.S. Eng. . . .	1	1	0
Turner, W. A., Esq.	1	1	0
Bigg, Austin, Esq.	1	1	0
Taylor, J., Esq., L.D.S. Ed.	1	1	0
Stewart, J. Esq.	1	1	0
Bailey, J. J., Esq.	1	1	0

A CORRESPONDENT'S REPLY.

To the Editor of the 'British Journal of Dental Science.'

SIR,—I am sorry you did not insert my letter relative to the action of the proprietors of the 'Royal Red Book.' However, I still hold that Messrs. Webster and Larkin have no just right to favour any special class of Dentists to the exclusion of others, even by payment, in such a publication as the 'Court Guide.'

Next, while I respect your suggestion I envy not the L.D.S.; and as to obtaining the diploma, I must respectfully beg to decline doing so, and can assert most cogent and just reasons for the same. First, one thing is certain, I should lose a large sum of money by taking up the degree of L.D.S.; that is, if I obtained it I should as a man of honour abide by the regulations, but in so doing I should be compelled to give up my present line of practice. This, with the cost of obtaining the diploma, for I would not *purchase* a compromise, but go in for the entire curriculum, and loss of time, practice, loss of patients by removal, &c., would entail the loss and expenditure of a large sum of money, which at my time of life I am far from justified in risking. I have those dependent on me whose claim is greater than even the *esprit de corps* of the Dental profession, much as I respect that. Next, could I treat my patients better or more honestly were I a qualified man? I fancy not! Again, after an experience and practice, extending over nearly forty years, could I tell my patients that I have become a qualified man, implying I was an ignoramus and humbug before? Not very well. On the other hand, if I did not inform my present connection what should I gain but satisfying the *amour propre* of the profession? The price to be paid is far too great for that honour. True, I might have the diploma beautifully photographed and mounted, and hung round my neck as a kind of Dental Order of the Garter while I operated, or I might have it elaborately framed and glazed, and suspended before my operating chair, like many of my so-called superiors have had done; or, better still, I might well advertise my diploma and qualified skill, as many a recreant L.D.S. has done. In fact, I have no end of examples to guide me of *gentlemen* of the qualified school. But, No! sir, sooner than follow any of the tricks named I would feign remain as I am. For, while I truly respect the diploma on principle, I find in my case I cannot carry it out practically. I am content to remain one of the humble followers of the noble Dental army of the past; excluding the chemists it was and is a noble army, though conventionally,

not in reality, unqualified. In its ranks I will remain, live, and die, and with it be buried in the past.

Believe me, sir, I am writing constantly, and have well studied the matter, but find the diploma will not *pay*. Pardon my viewing it in such a vulgar light, much below that of an L.D.S., still in *that* light I must look at it, and I am not alone. The fact is, obtaining the diploma for such as myself is the same as commencing again in practice. Were I thirty years younger, the thing would be different. It may be, and has been said, I should improve my status and practice. Perhaps! But, alas! sir, the public in general of the period does not, and cannot, discriminate between the Dentist of the Queen, Friend of Hutchins, Esq., and Sylvanus Dens, Esq., M.R.C.S., L.D.S., or, how comes it the *former* is so much more sought *after* than the latter, diploma included? Why is this? Simply because the public is accustomed to Dentists as *they have been, and are not as they will be*. In some fifty to one hundred years, the public of *that* period will get to thoroughly know that between the medical man and the Dentist—beg pardon, Dental Surgeon—if there *is a difference it is all the same*. Much to the injury of Dentistry, nevertheless, more the reason I should remain as I am. Apologising for taking up so much of your valuable space, yet feeling the remarks are called for after what you stated in “Answer to Correspondents,”

I am, &c.,

GEORGE WARD.

Oxford Street, W.

[Our correspondent must see that his suggestions respecting Messrs. Webster and Larkin should be addressed to them not us].

ALVEOLAR HÆMORRHAGE.

To the Editor of the ‘British Journal of Dental Science.’

SIR,—Referring to the method of arresting alveolar hæmorrhage mentioned by Mr. Harding, L.D.S. Eng., in the number for the 15th April of the ‘British Journal of Dental Science,’ it would be an interesting and perhaps profitable study to examine the different methods adopted by various practitioners to accomplish the same end.

A method very similar to that which Mr. Harding found so successful occurred to me some two years ago, when I had a case in practice which caused me some considerable anxiety. The hæmorrhage followed the extraction of an upper molar, and was arrested by almost identically the same means, except that, in addition to taking a careful impression of the parts

and trimming away all excess, I softened the under part of the composition after removal from the tray, and got an articulation with the lower teeth; then, after plugging tightly and inserting the matrix in position, I bound up the lower jaw so as to secure constant pressure upon the parts. I may say that I have tried this method in two obstinate cases, and have found it entirely successful.

I am, &c.,

GRAHAM W. WHITE, L.D.S.I.

Newport, Mon.

MONTHLY REPORT OF CASES TREATED AT THE DENTAL HOSPITAL OF LONDON,

FROM APRIL 1ST TO APRIL 30TH, 1882.

Extractions	{ Children under 14	524
	{ Adults	784
	{ Under Nitrous Oxide	385
Gold Stoppings.....		94
White Foil ditto		2
Plastic ditto.....		409
Irregularities of the Teeth treated mechanically.....		69
Miscellaneous Cases.....		286
Advice Cases.....		124
Total.....		2677

WALTER HARRISON,

House Surgeon pro tem.

MONTHLY REPORT OF CASES TREATED AT THE NATIONAL DENTAL HOSPITAL,

FROM APRIL 1ST TO APRIL 30TH, 1882.

Number of Patients attended		1437
Extractions	{ Children under 14.....	369
	{ Adults.....	633
	{ Under Nitrous Oxide	75
Gold Stoppings		49
Sheets of Gold used, independent of Pellets.....		55
Other Stoppings		316
Advice and Scaling		79
Irregularities of the Teeth		74
Miscellaneous.....		277
Total		1872

FRED. WM. BATE,

House Surgeon pro tem.

To Correspondents.

1. Communications intended for insertion in the ensuing number must be forwarded to the Editor, at the Office, 11, New Burlington Street, London, W. by the 8th and 23rd of the month, and must be duly authenticated by the name and address of the writer.
2. We cannot undertake to return communications unless the necessary postage stamps are forwarded.
3. It is earnestly requested of our correspondents that their communications be written on one side of the sheet only; and we also beg to call particular attention to the importance of a carefully-penned signature and address.
4. All communications relative to subscriptions and advertisements are to be addressed to the Publishers, Messrs. J. and A. Churchill, 11, New Burlington Street, London, W.
5. The Journal will be supplied direct from the office on PREPAYMENT of subscriptions as under:

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ANSWERS TO CORRESPONDENTS.

- T. A. BRENCHEY wishes to ascertain the address of "M. Jean Charles Lemmens," who came from Belgium in the autumn of 1881.
- H. C. WILSON.—We thank you for enclosure, but do not think it wise to comply with your request. Education alone can cure the evil.

Communications have been received from Messrs. T. A. Brenchley, H. C. Wilson, Secretary Faculty of Physicians and Surgeons, Glasgow, Secretary Royal College of Surgeons, Edinburgh, T. Murphy, J. Allin, G. A. C. Benham, W. Weiss, Walter Whitehouse, F. Bate, W. Harrison, G. N. White, Geo. Ward, T. S. Carter, B. T. Hutchingson, T. Cooke, G. Cunningham, Secretary Odontological Society.

BOOKS AND PAPERS RECEIVED.

- 'Dental Record.'
- 'Glasgow Medical Journal.'
- 'L'Odontologie.'
- 'L'Odontologia.'
- 'Lancet.'
- 'British Medical Journal.'
- 'Medical Times and Gazette.'
- 'Pharmaceutical Journal.'
- 'The Preston Guardian.'

NOTICE.—We desire that it may be clearly understood that our pages are open to all for free expression of their views on matters connected with our profession. We only ask for terseness of expression and MODERATION IN TONE.

When otherwise unobjectionable, difference of political or other opinion will never be regarded by the Editor as a disqualification for the admission of any communication to the pages of the **BRITISH JOURNAL OF DENTAL SCIENCE.**

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VOL. XXV.

SUGGESTIONS AS TO THE FORMATION OF A BENEVOLENT FUND.*

By J. S. CRAPPER, L.D.S., Hanley,

DENTAL SURGEON TO THE RUGELEY DISTRICT HOSPITAL.

MR. PRESIDENT AND GENTLEMEN,—I wish to bring before you a suggestion which, if carried out, will in my opinion redound to our credit as an association, and may possibly be a substantial benefit, even to some of our present members and their families. I have for some time conceived that it is desirable that, connected with our business and social meetings, we should have a benevolent fund. In societies of every kind men have learned to recognise the importance, if not the absolute necessity, of such a fund as a practical part of their organisation.

This is the case not only in what are termed “Friendly” societies, but in institutions formed for social enjoyment or for defensive purposes. We all know that in our own profession appeals have been occasionally made to us for aid in cases of distress which have arisen from sudden and unavoidable causes. And such circumstances will inevitably recur. I have for some time been impressed with the belief that it would be far better to have a permanent fund to meet all emergencies than to have individual appeals made periodically to our generosity, and I may say to our charity. Seeing, then, that we are called upon to exercise our benevolence, and believing that such must ever be the case in this as in other

* Read before the Midland Counties Branch of the British Dental Association, April 26th, 1882.

societies, our benevolent fund should be the outcome of mutual contributions. It is not aid to those who do wrong, not support to the idle and the profligate (of whom I am proud to say our society does not consist), nor assistance for those who are unworthy of or unfaithful to our profession that I seek to provide for, but I desire to see established a fund to afford aid to those members of our association and their families who may be reduced to distressed circumstances by unforeseen and uncontrollable turns in fortune's wheel. By making this provision from the mutual contributions of the members, any such help to a distressed member or his family will be deprived of that unpleasant character which is necessarily attached to the sums raised by direct appeals in individual cases, such as those of which we have had painful experience in the past. I maintain that it is incumbent upon us to assist a member who is in pecuniary distress, and we ought to be in a position to do this in a manner which could not wound sensitive feelings by the publicity of such distress or the unnecessary display that the aid so rendered is in the nature of charity. If the meeting should think fit to affirm that it is desirable to establish a benevolent fund, a small committee might then be appointed to prepare rules for managing and dispensing the fund, towards which I shall be happy to contribute ten guineas.

After concluding his paper Mr. CRAPPER exhibited and demonstrated an interesting collection of models of the mouths of British and foreign celebrities, and others, amongst them the modern Zulu; Bates, the American giant, who stands eight feet two inches; a negress (with jaws of enormous size), now upwards of one hundred and four years old; peculiar abnormalities, some of which he had received in exchange from Dr. Barratt, of Buffalo, U.S.; several most difficult cases of irregularity, &c. Also models of the mouth of a young lady, aged fourteen, who, when brought to him for examination, presented a very unsightly appearance, the upper centrals and laterals being sufficiently prominent to considerably overlap the lower lip. Her parents were greatly averse to having teeth removed,

thinking she would have to wear artificial ones. After explanation he removed the first bicuspid on each side, and made a vulcanite plate covering the second bicuspids and first molars. Outside their buccal surfaces small metal hooks were fixed. A metal plate was struck to fit the labial surfaces of the central incisors, slightly overlapping their tips, having a hook on either end; by these it was attached to the vulcanite plate with small elastic bands stretched between the hooks on each plate. This treatment had so far proved satisfactory that although the case was not yet quite completed, the appearance had been vastly improved and the prominent teeth were now *within* the lower lip.

GUM TREATMENT.*

By GEORGE CUNNINGHAM, D.M.D. (Univ. Harvard),
Cambridge,

DENTAL SURGEON TO THE NORTH CAMBRIDGE HOSPITAL.

(Concluded from page 475.)

THERE is an essential part of the treatment which must not be omitted, with which I occupy a considerable part of the first visits, and that is a little "surgery talk," as it has been termed. The patient is informed as to the utmost importance of proper and frequent ablutions of the mouth, the best time for the same, the kind of toothbrush, and the dentifrice he should use. He is carefully instructed as to the mode of using the toothbrush, and the necessity of applying it as a direct stimulant to the gums and not confining its action to the teeth alone. Dr. Coffin's form of toothbrush, from its having a *round, straight* handle, seems the best adapted to the rotatory motion of the brush, which is the least employed but the most efficacious mode of use. We shall now attempt to describe the various pathological conditions in which we have found this mode of treatment most useful.

Inflammatory conditions.—According to the locality and

* Read before the Eastern Counties Dental Association, April 26th, 1882.

symptoms we can distinguish a superficial inflammation of the gums confined to the outer mucous membrane, or papillary layer with its epithelium, and a general (parenchymatous) inflammation affecting both the outer and the deeper layers of submucous connective tissue. It is important to remember how intimate is the connection of this latter layer with the periosteum of the bone and the periodontum or root membrane. Hence we can easily see how every inflammation of the gum may readily extend to the neighbouring tissues and so lead to their destruction. One of the most common forms of gum disease is what may be best described as a catarrh of the gum. In place of the familiar pale pink gum of glistening aspect and compact structure the tissue is a deep rosy red colour, especially at the free margins, and is hot and swollen. A grey mucilaginous and occasionally pruriform secretion collects in the pockets of the gum, and oozes out on pressure of the finger. It is of most frequent occurrence upon the labial surface of the incisors and canines of the lower jaw, less frequently it is the same surface of the corresponding upper teeth that is affected. Wedl says in this case the hard palate of the affected side becomes involved, but we have not hitherto observed this fact. The molar region of the gum is very rarely attacked. The inflammation may continue months and even years, particularly upon the lower jaw, where the secreted fluid accumulates between the detached gum and the necks of the teeth. In long-standing cases the periodontum becomes involved as also the periosteum of the thin alveolar border, causing the resorption of the latter and the loosening of the tooth. According to Wedl "the more acute forms are due apparently to the causes which generally give rise to catarrhal conditions, to excessive variations in temperature, damp, and cold weather, &c., also as an accompaniment of catarrh of the intestinal tract."

The acute exanthemata, syphilis, and mercurial treatment, &c., develop inflammatory affections of the gum, but they may be dismissed as scarcely falling within our province. A common form arises from mechanical injury in cases where the masticatory teeth have been lost, and

the work is thrown on the incisors and canines. In such cases artificial dentures will form a necessary part of the treatment. By far the most frequent form of gum disease coming under our notice is a chronic catarrh caused by the mechanical irritation of deposits of tartar, while the catarrhal secretion causes an increased formation of tartar. The development of the one pathological condition thus promotes that of the other. The constitutional peculiarity of the individual must necessarily modify the character of the secretion. In the case of healthy individuals it yields almost directly on the removal of the exciting cause. We have found prodding with deliquesced crystals of carbolic acid and subsequent treatment with tincture of iodine most effective in such cases. For more obstinate cases a useful application is obtained by dissolving crystals of iodine in strong carbolic acid.

Atrophied conditions.—Loss of the red colour, uniform turgescence, recession from the necks of the teeth, are the familiar characteristics of senile atrophy. We may in such cases do much to mitigate the effects of the disease by treatment, but we cannot hope to effect a radical cure. The neglect of cleanliness and the accumulation of tartar results in premature atrophy, and in such cases we may hope to arrest the disease. We have in our possession a collection of teeth extracted in dispensary practice in Dublin in which the cause of the disease was summed in a little word of four letters—DIRT—the result of sheer neglect.

Wedl describes what he terms atony of the gums as follows:—"From the fact that the first indications of that affection of the blood called scorbutus are presented by the gums, which acquire a deep red colour, become spongy, and bleed spontaneously, it has been customary to apply the term scorbutic to all those affections of the gums which present one or more of the above appearances, although they may have nothing in common with scorbutus, except, perhaps, a few symptoms. The condition of sponginess and laxity of the tissues, and even those changes also which are induced by tartar, are described as an atonic condition."

"Lax gums present a dark red colour, a swollen, spongy,

and inelastic texture; the margins—which should form a firm investment around the necks of the teeth—are swollen and uneven, recede from the necks, or, as is the case frequently, cover over half the crown. The points of junction of the gingival arches upon two adjacent teeth are transformed into shapeless masses. Under even very slight contact an effusion of dark red blood ensues. In some cases this condition involves the entire gums, in others it is limited to a portion of them. As it is impossible with such a condition to keep the teeth clean, tartar accumulates beneath the lax and swollen gums, and in this case is the result and not the cause of the affection. Passive congestions, induced by the atony of the organic muscular fibres of the blood-vessels, give rise to hæmorrhages, which in rare cases are so severe as to be checked with difficulty.”

In these cases the treatment as before consists in the thorough cleansing of the teeth. Carbolic prodding of the gum, and painting with iodine, and lastly, but not least, the energetic co-operation on the part of the patient with the toothbrush. Hamamelis might be useful for arresting any spontaneous hæmorrhage that might occur.

Hypertrophied conditions.—These are met much less frequently in ordinary practice. Hypertrophy of the gums is a result of chronic inflammation of the periodontium following caries of the teeth, also of the irritation caused by the sharp edges of roots. The hypertrophy occurs in both the papillary layer and in the corium of the mucous membrane. When it occurs in the former it is most conspicuous upon the facial surfaces of the gums, and is confined to the region of one tooth or a few teeth, or acquires more extended limits in cases of caries involving the crowns and roots of several teeth. The further pathology of this condition would carry us beyond the limits of our paper. The therapeutic indications are the removal of roots and the treatment of the carious teeth. Zinc chloride and tincture of iodine, also a saturated solution of tannin in glycerine, have proved most useful in our hands. We have been experimenting largely with iodoform, which had a marvellously rapid curative power in the case of inflamed tissues, and also in relieving

pain. Iodoform, he believed, was destined to play an important part in certain forms of gum treatment. Purposing to experiment further with it, he would recommend it to the attention of his brother practitioners. It had been suggested that iodoform might be used in lieu of arsenic for obtunding sensitive dentine; but one could not always get the prescription made up so as to have it in every case alike, as he had found in obtaining supplies from two different chemists.

It occurred to us at the last moment that we might learn something from an inspection of our records. The results are somewhat curious. We should be glad to know if our fellow practitioners find it necessary to resort to gum treatment in as great a number of cases as we do, or may this prevalence of gum disease be due to peculiar climatic conditions. Out of ninety-six patients seventy-one required gum treatment. Of these cases the majority (fifty-three) were disposed of in two sittings, while fourteen required some five or six treatments. The remaining four cases were of a most obstinate nature, more or less complicated by constitutional conditions, and required considerably more prolonged treatment, extending over two or three months.

Note.—These patients all reside in or near Wisbech, which is situated in the Fen country, but has fortunately lost its notoriety as the home of ague and other malaria troubles. At some future time we hope to lay fuller and more carefully prepared statistics on the subject before the Association.

We have had many mouths coming under our care in which the teeth have been carefully filled, but the diseased conditions of gums have been completely ignored. The most remarkable case of all is that of a patient, himself an L.D.S.I., whose mouth has been treated by several first-class practitioners. The operations performed have included some excellent pivoted teeth and several good plastic fillings—but his attention was not called to the deplorable condition of the gums, which, in our opinion, demanded the most instant attention.

In conclusion, gentlemen, we trust we have succeeded in

convincing you of the frequency of mild forms of gum disease, together with their pernicious effects upon the oral secretions, upon the contiguous alveolar border, upon the roots, membranes, upon the teeth themselves, and consequently upon the general health of the individual, doubly pernicious from this very mildness, causing them to escape attention. At any rate, our experience is that our patients have greatly benefited by the treatment indicated, and we shall be glad to receive the benefit of your experience in the same direction. It is our earnest conviction that we shall prove ourselves truer practitioners of the healing art by a more extended adoption of gum treatment.

Mr. R. W. WHITE said that all knew the deleterious effects of the collection of tartar at the necks of the teeth, and admitted the necessity of carefully removing it. But might not much of the inflammation of the mouth be attributable to the secretion of the salivary glands or arise from stomachic and other constitutional causes. Suppose the mucous membrane of the mouth were put right one day, in what state would it be in three months' time? Unless the source of the disease, which might be constitutional, was reached, there would be a recurrence of the disease. There could be no question about the thoroughness with which Dr. Cunningham, in true American style, went about his work, and no doubt many of his patients thoroughly appreciated his treatment with prod and acid. In the case of Rigg's disease he had tried the acid, though he did not like it, for the simple reason that some of his patients objected to it. The preparation which gave least pain, and which Dr. Cunningham had not mentioned, was eucalyptus oil. Put well down at the margin of the gum it made the gums healthy for a time. In the simple forms of gum disease much depends on the patient keeping the teeth perfectly clean and himself in fair health.

Mr. MUSGRAVE considered that Dr. Cunningham had so ably and exhaustively dealt with the subject as to leave no room for discussion. He would, however, ask him what was his method of treating abscesses? He had tried eucalyptus oil in many cases with success.

Dr. CUNNINGHAM replied that he used eucalyptus oil very largely in conjunction with iodoform.

Mr. MUSGRAVE said that he pumped it well into the canals by means of small bristles with a little bit of wool on the top.

Mr. R. W. WHITE.—Use a small syringe, drive it home, and break up the sac beforehand if you possibly can.

Mr. MUSGRAVE said that he formerly passed up a syringe with hypodermic point, but lately he had used the bristles.

Dr. CUNNINGHAM said an *impromptu* piston of gutta percha or soft rubber would be found preferable. But he strongly recommended Farrar's abscess syringe. It only wanted to be "cheapened" to bring it into every-day use.

The thanks of the Association were given to Dr. Cunningham for his paper.

ON THE MANIPULATION OF VULCANITE ON THE PLATE AND TINFOIL SYSTEM.*

By Mr. A. LINDLEY LITTLEBOY, Norwich.

MR. PRESIDENT AND GENTLEMEN,—The subject that I am about to bring before your notice is "the Manipulation of Vulcanite upon the Plate and Tinfoil System," believing that it is little known in the Eastern Counties, or if so, adopted by few; though I think if you once introduce it into your working of vulcanite you will not feel inclined to relinquish it, as there are many advantages in the system which you will perceive as we progress.

First you require a perfect cast and die to strike up the metal plate—pewter or gaspipe makes a very good metal for the purpose. The plate depends for size and thickness upon the case you have in hand; if it is a whole upper set you can make the plate all the same thickness, or a graduated plate

* A paper read at the Annual General Meeting of the Eastern Counties' Dental Association, April 26th, 1882.

of two or three plates; of course the inner plate, or plates, would be thinner and smaller than the full-size plate. If it is a partial piece, or a whole upper set requiring the mineral teeth to be fitted to the natural gum, the plate requires a slight difference in its construction. The outer or full-size plate should be made in two parts, or cut in two, before the teeth are fitted to the bite; the reason of this I will explain hereafter. Take a piece of tinfoil,* a little larger than the model, and press it close all over with the fingers, as you would a lead pattern; place it on the zinc cast and give one tap in the die; then place the pewter plate over the tinfoil and strike the two together in the die, and put the tinfoil away until wanted. The pewter plate is now finished; if made of more than one piece wax them together. You can now fit it to the patient's gum as you would a gold plate to see if there is any alteration required. It also forms an excellent base, equal to a gold plate, for taking the articulation of the jaws.

We suppose the artificial teeth are set in their proper position to the bite, you may now fit them in the mouth with greater safety than you can with a wax plate, and any little alteration in the position of the teeth that you may think necessary can be easily made. We now commence the preparatory process for flasking. You must now decide whether you use the original model or not, if the original is used there is no necessity to oil the plaster cast to prevent the tinfoil adhering to the model. If you use a duplicate, or flask direct from the tinfoil and plate, it is best to oil the model, then place the tin foil upon it, working a burnisher gently over it. Return the plate and teeth to their position upon the tinfoil covered model; if it is a whole set with artificial gum, run a little wax round the edge of the plate and artificial gum, so as to attach the foil to the set, lift it off the model and cast a little plaster into the tinfoil palate, and when set, flask in the usual way.

Take a piece of foil, the shape of a half circle, and cut a few slits round the edge; press it with care, as you did the

* Not the tinfoil of commerce, but a foil made from pure tin obtainable at the dépôts.

other piece, over the palate and at the back of the teeth, leaving the edge of the foil projecting a little above the teeth for the plaster to hold it in its place. Now take a warm burnisher and go carefully over the surface of the foil, taking care not to disturb the teeth—you can easily protect the front teeth with your fingers; apply oil, or any other non-adhesive liquid that you may use, to the plaster with a small brush, taking care not to come in contact with the tinfoil cast on the upper part of your flask, well warm and open; remove the plate and wash out, and the flask is ready for stuffing with a lining of tinfoil to steam your vulcanite between.

(To be continued.)

CAUSES OF THE INCREASING DEGENERATION OF HUMAN TEETH, IN RELATION MORE PARTICULARLY TO THE THIRD MOLAR.*

By T. S. CARTER, L.D.S. Eng., Leeds,
DENTAL SURGEON, LEEDS GENERAL INFIRMARY.

(Concluded from page 481.)

By the law of inheritance the peculiarities of the parent are most frequently reproduced in the offspring. It is on the strength of this tendency that Darwin bases his argument relative to the formation of species, and you are aware how common it is to see certain anomalies running through several members of the same family. In similar manner the excitable temperament of the parent is generally transmitted to the children, who are precocious and too readily sensitive to emotional influence.

This state of things is usually increased by the over-zealous desire of parents for their progeny to show signs of intellect at an early age. Consequently their hours of

* Read before the Midland Counties' Branch of the British Dental Association, April 26th, 1882.

recreation are curtailed in order that they may receive mental tuition, and it is at this period of life that the brain is so readily overtaxed. Again, mothers like their children to look "pretty," and they are therefore put in figure-fitting costumes of fine fabrics, which, owing to quality and make, interfere with the perfect liberty of action which the limbs should be allowed at this critical period of life. The physical tendencies of a child have unnecessary obstacles to contend with which retard a natural and healthy development, and at the same time the mental powers receive too much stimulation, and nervous exhaustion is frequently the result.

The most rapid increase in the size of the brain takes place during the first seven years of life, and it is during this term that the crowns of all the teeth, the third molars excepted, are being formed.

You may quite reasonably, therefore, believe that undue mental excitement during this early period of life would interfere with the formative power at work on the developing tooth germs, for the nervous system regulates most of the functions of the body, and directly influences the progressive growth of structure.

Dr. Magitôt, of Paris, whose indefatigable labours in the field of science render him an authority in special pathology, read a paper at a meeting of the International Medical Congress upon "Erosion of the Teeth regarded as an evidence of Infantile Convulsions." He made out a strong case in favour of his theory that "notches and furrows" on the permanent set of teeth are due to this disease of childhood which temporarily interferes with their natural formation.

The trigeminal nerve regulates the nutrition of the tissues to which its numerous branches are distributed, and the nervous centre from which it takes its origin is, according to Professor Anstie, "the one which in the human subject is most liable to congenital imperfection of the kind which necessitates a breakdown in its governing functions at special crises in the development of the organism." I am therefore of the opinion that the main *cause* of the increasing

degeneration of human teeth is due to inherited nervous exaltation interfering with the normal functions of the trigeminal nerve during the first seven years of life. If this be true you would reasonably expect to find teeth normal in position and of sound structure in the mouths of persons of naturally lethargic disposition or wanting in intellect, and the reverse of this in the case of people who have inherited a hypersensitive temperament. I have little data to work upon, but will call your attention to one point, viz. that you rarely see irregularity in position of the teeth of the temporary set, which may be explained by the fact that they are principally formed during the intra-uterine life, and consequently before the effects traceable to causes explained can come into effect. It would also be well to note the effect of idiocy on the dental organs, and I cannot do better than give you the experiences of Norman Kingsley, who has devoted considerable time and attention to the subject.

He is of the opinion that the "contracted arch" is associated with a high order of intelligence, and that with congenital idiots there is only a small percentage with pronounced irregularity in form of jaw or position of teeth.

On examination of about 200 inmates of the asylum on Randall's Island, there was not a single case of very marked dental irregularity, though there were three or four "saddle-shaped" palates. Mr. Kingsley was of the opinion that taking them collectively they showed far better development of jaws and teeth for density and durability than were generally to be met with. He noticed that where there was a fairly good physical condition and chance of mental improvement the jaws and teeth were of normal condition.

Professor Stellwagen visited the Pennsylvania School for "Feeble-minded Children" and examined the mouths of 184 patients. He says, "The jaws were unusually large as compared with the same number of jaws in the mouths of intelligent children such as would seek the services of the Dentist."

The information I have given in proof of their being a correlation between a feeble intellect in early life and well-formed jaws and teeth is small in amount, but the evidence

is sufficiently strong to induce the belief that the theory I am advocating may be the true one and will bear investigation, and I have therefore confidence in bringing it before you for careful consideration.

In addition to the marked structural depreciation which is taking place in the wisdom teeth, there is such an evident diminution in their size and uncertainty as to period of eruption and position that we may look upon them as becoming rudimentary and prospectively extinct.

It is in nature found that if an organ is becoming suppressed it is apt to be variable.

Mr. Felix Weiss records that in the case of 312 persons he examined over twenty-six years of age there were 304 wisdom teeth absent. It is in the upper jaw that their size is generally found the most diminished, and I have seen several with crowns not larger than a grain of wheat. Their fangs, also, instead of diverging are merged into one.

Though these teeth will be subject to the deteriorating influence of transmitted causes previously explained, there is evidently an additional factor at work which in my opinion may be safely taken into consideration as aiding in the reduction of these organs to a rudimentary state.

I have been unable to find an article on the theory I wish to advocate, but after careful consideration have determined to lay it before you, and if in doing so I tread upon rather new ground, I trust you will be none the less lenient in your criticism.

It is a law in nature that *development* or, on the contrary, *atrophy* of a part takes place as a result of increased use or disuse, or, in other words, nature creates or lessens the supply of tissue according to demand.

Thus, though a youth may be remarkable for the absence of muscular development, let him under favorable conditions go through a course of systematic physical training and note the increase of substance which takes place; or, on the other hand, deprive the athlete of the power to continue his life of activity and observe how his muscles diminish.

Darwin says that in the domestic duck "the bones of the wings weigh less and the bones of the leg more, in proportion

to the whole skeleton, than do the same bones in the wild duck; and this change may be safely attributed to the domestic duck flying much less and walking more than its wild parents."

It is frequently found that ground-feeding birds inhabiting oceanic islands have lost the power of flight, probably owing to their being rarely disturbed by beasts of prey and their wings little used.

Domestic animals are seldom alarmed, and notice how their ears droop, which may be due to non-use of the aural muscles.

Also note the small development of the udders of cows in countries where they are not systematically milked in comparison with those on English farms.

May not, therefore, the marked diminution in size of the wisdom teeth of civilised races as compared with the large development of the corresponding teeth of the *uncivilised* be dependent upon a lessened demand for masticating power?

The wisdom teeth of savages are nearly as large and well developed as the first and second molars. They are found to occupy a normal position, and are in structure little prone to decay. Mr. Mummery examined 141 skulls from powerful African races and did not find a single deficient third molar, but, on the contrary, met with five cases where there were fourth molars in the upper jaw.

Savages live upon coarse foods which they only roughly cook by boiling over burning logs or "toasting over the fire," and the meat is generally fresh killed and not of the tenderest fibre. With the ancient Britons the same rude method of preparing food was probably adopted, and as a result it is commonly found, on examination of their skulls, as well as those of savages of the present day, that the teeth are ground down to the level of the pulp chambers. This is especially observable in the mouths of New Zealanders.

In order that coarse food taken into the mouth may be rendered fit for passage into the stomach, it is essential that there should be teeth with large grinding surfaces suitable for pounding and triturating the substances given to work upon; and the third molar will be in constant use.

Darwin says, "If under changed conditions of life a structure before useful becomes less useful its diminution will be favoured, for it will profit the individual not to have its nutriment wasted in building up a useless structure."

Well, gentlemen, the conditions of life *have* changed. Amongst civilised races food is *not* eaten in a half-raw state, but is carefully selected and softened by a system of cooking, so as to have lessened the necessity for the extent of masticating surface found to have existed in the mouths of our ancestors and amongst people of simple habits of to-day.

The wisdom teeth have to a great degree been thrown out of work, and on the principle I have explained that *use* induces development and *disuse* atrophy do I believe the degeneration so observable in the third molar of the present day may be attributed.

Lessened use of the dental organs has induced a diminution in the size of the muscles of mastication, the zygomatic fossæ are smaller than formerly, and probably the failing elongation of the jaws posteriorly is a result. Should the wisdom teeth ultimately become rudimentary, as teeth are found to be in the jaws of unborn calves and in the heads of foetal whales, they will even then do good service by acting as a link by which future naturalists may trace the source of our common origin.

CLOSURE OF THE JAWS.*

By Mr. ALFRED H. TESTER.

MR. PRESIDENT AND GENTLEMEN,—It is with great pleasure that I have accepted an invitation to read a paper before you to-night. The subject which I have chosen, "Closure of the jaws," is one which often comes under our notice in its simplest form, and we are often called upon to treat in conjunction with the surgeon the more severe form.

* Read before the Students' Society of the Dental Hospital of London, May 8th, 1882.

Therefore I hope you will pardon me if I encroach a little on the domains of general surgery. Closure of the jaws may be divided into spasmodic and permanent.

Spasmodic closure of the jaws.—One of the chief causes of this is due to that condition called *tetanus*, which is a tonic spasm of the voluntary muscles, which are in a state of constant spasmodic tension; and this is exaggerated from time to time into violent convulsive action. Tetanus may be divided into traumatic and spontaneous, also into acute, subacute, and chronic. There are several varieties of this disease, which are named according to the muscles indicated. The symptoms of *acute* tetanus may be produced at any period after an injury without any premonitory signs, the patient begins to complain of stiffness about the neck and jaws, and has great difficulty in swallowing and chewing; after this the muscles of the jaw, viz. the masseters, temporals, and pterygoids, contract and firmly bind the jaws together; convulsive cramps occur every time the patient tries to open the mouth or to swallow; other muscles share in this contraction, the name of the “tetanic grin” being given to those of the face. The muscles of the abdomen and nearly all the body gradually contract.

During the spasms the pulse is quickened, the temperature high, skin hot, with wakefulness, thirst, and constipation, and there is more or less general fever; the spasms vary very much in severity; occasionally the tongue is protruded from the mouth, and is severely lacerated by being caught by the closing jaws.

Death usually occurs from suffocation during a spasm, produced by the stiffness of the muscles of respiration or by exhaustion.

The *subacute* and *chronic* only differ from the acute in the course and severity of the symptoms; the *spontaneous* very rarely occurs in this country, being generally found in the tropics; it may be caused by acute laryngitis. Very little is known of the predisposing causes of tetanus; it is much more common in hot countries than in cold, attacking persons of the negro race before whites. Bad hygienic conditions seem to favour its development.

Nothing is really known of its pathology. It is supposed to consist essentially in inflammation propagated through the nerve or nerves injured to the spinal cord, thus exciting the generally spasmodic condition.

As regards the treatment very little can be done; the injured nerve in some cases has been removed, divided, and stretched, and has sometimes resulted in cure. Irrespective of these surgical measures the treatment of tetanus is entirely empirical and completely unsuccessful. Acute tetanus is nearly always fatal. Patients may get just enough nourishment through the spaces of the closed teeth to keep up life, or they may be fed through the nose with a tube.

If spasm of the glottis is feared tracheotomy may be at once performed. The patient should be kept quiet, in a cool room, free from draughts, and should not be disturbed; the patient has a great fear of the spasm, and has a vivid recollection of the last.

Nearly every medicine has been tried; the favourite remedies are the Calabar bean, aconite, chloral, opium, and chloroform.

Tetanus has to be diagnosed from strychnia poisoning, hysteria, epilepsy, hydrophobia, and rheumatism.

Tetanus from a Dental point of view may be caused by the wound of a nerve, by the reduction of a dislocation rupturing a nerve, or may result from the mechanical irritation of the pulp of a tooth; the latter may be caused by a fracture, leaving bare a sensitive pulp, which is one of the most nervous structures of the body. Mr. Tomes, in his lectures on "Dental Surgery," relates the case of a gentleman who had the misfortune to break off a front tooth and had the stump pivoted, but after the operation severe pain was set up in the stump, daily increasing in severity until he was obliged to visit a medical man; but it was too late, trismus came on within twenty-four hours, and was soon followed by tetanus and death. A case of tetanus is also recorded by Dobbelin which came on immediately after the extraction of a tooth.

Trismus or *lockjaw* is a mild form of tetanus, and is the name given to the spasmodic closure of the jaw when the

muscles around the jaw are alone or chiefly affected. By far the most frequent cause of inability to separate the jaws is due to a reflex action caused by the irritation set up by diseased teeth, and is almost invariably connected with the difficult eruption of the wisdom and second molar teeth, though it is sometimes caused by the exposure of the nerve of the first or second molar.

The trismus may be of sudden occurrence or may come on gradually, and it may be of weeks', months', or years' duration.

As regards trismus caused by the difficult eruption of the wisdom teeth, it occurs, as a rule, about the age of twenty, when the eruption of the teeth are expected; and that makes our diagnosis easy, and generally results from the want of room between the second molar and ramus or tuberosity of the jaw; or it may be due to the tooth being itself malplaced and unable to assume its normal position in the jaw, and therefore by pressure on the neighbouring structures sets up irritation which induces a tonic spasm of the above-mentioned muscles. Even with all this difficulty in eruption the tooth may be carious with inflammation of the pulp, causing an abscess, which may appear as a large swelling underneath the jaw, and burst either into the throat or on the outside, causing such great pain that the patient is unable to open the mouth. It is generally the teeth of the lower jaw which cause this malady, and by reason of the imperfect lengthening backwards of the ramus, the crown of the tooth only shows itself partially and incompletely above the mucous membrane, the front part only emerging, so that every time the jaws are closed it causes a terrible pinching of the mucous membrane over the tooth. Even before the tooth is erupted the mucous membrane behind the second molar gets inflamed and pus is found in the areolar tissue of the gum. The inflammation set up spreads into the cheeks and fauces, followed by severe pain and stiffness in the movements of the jaws, together with great difficulty in swallowing; the masseters gradually contract, firmly closing the jaws.

The treatment in these cases will greatly depend upon the

degree of the impaction of the tooth and the age of the patient. If the tooth is simply covered by dense mucous tissue lancing may effect a cure, and in the operation not only lay bare the tooth but remove entirely the flaps of gum overlapping it, which may be easily done by Mr. Woodhouse's punch. In a young subject, where the wisdom teeth appear a little earlier than usual, a certain amount of pain must be endured for a time, as the increased size and posterior elongation of the jaw may accommodate them ultimately, though if there is a carious first or second molar the extracting of it may give room for the wisdom to assume a normal position in the jaw. If the patient is older and the closure is rather persistent, the extraction of the offending wisdom tooth is the only treatment. The great difficulty in the operation is caused by the rigidity of the muscles not allowing the jaws to open wide enough, and therefore rendering it impossible to see the tooth. Under such conditions the second molar should certainly be extracted, and this tooth will often show signs of absorption on the posterior fang.

The mouth must be opened by a screw gag or wedges under chloroform; the continued application of steady force will cause the muscles to yield, at least enough for examination. It is sometimes necessary to wedge for some days, but it is best to do it at once if possible, as at night the jaws are apt to close again. The wedge invented by Mr. Maunder seems to possess especial advantages. It is a conical wedge on which is cut a spiral screw-worm, which is elongated and drawn out; this may be introduced between the incisors and canines or premolars, as they are generally firm enough to bear the use of this instrument, and by slowly twisting the separation of the jaws may be easily effected.

I will now relate two cases of trismus which came under the care of Mr. Alfred Coleman of this hospital. The first is the case of Miss J. D—, æt. 24, who applied at the Dental Hospital, on a second occasion, under the following conditions:—About six weeks previously, on the occasion of her first visit, she had a first lower molar of the right side extracted, of which a small portion remained; from the time

of the operation she had suffered continuous and increasing pain, accompanied with gradual closure of the jaws from muscular contraction. The pain was particularly severe at night, and the closure of the jaws preventing the patient from taking suitable nourishment. On examination of the mouth the fragment of the first molar was detected; the second molar had been removed some time previously, but over the third molar (not erupted), projecting internally towards the tongue, was an unusual amount of mucous tissue. Gas and ether having been administered by Mr. Coleman, Mr. R. Woodhouse removed the fragment of the first molar with the elevator. Little or no benefit resulted from the operation, although every treatment that could suggest itself was tried, including the removal of a V-shaped portion of gum over the unerupted wisdom tooth. It was then determined to remove the third molar. Gas and ether were administered as before, the mouth forcibly opened, and the tooth elevated from its socket by Mr. Woodhouse; marked improvement followed the latter operation, the pain almost subsided, and the patient could open her mouth to very nearly, if not quite, the natural extent. It was consequently inferred that a complete cure had been effected, but, greatly to the disappointment of those who had charge of the case, the symptoms of pain and closure of the jaws returned in almost as severe a condition as before. Believing the conditions to be greatly dependent on the state of health of the patient, and having a suspicion that the case might be one of hysteria, Mr. Coleman placed the patient under the charge of his colleague, Dr. Brunton, at St. Bartholomew's, who informed him that the case was one of hysteria, encouraged and abetted by the mother.

The next is the case of A. B—, male, æt. 22, a bricklayer, in comfortable circumstances, and a respectable, sober man, himself applied at the Dental Hospital about fourteen months ago on account of severe pain from which he was suffering about the region of the lower left third molar, and accompanied with closure of the jaws. The case coming under the care of Messrs. Coleman and Woodhouse, they decided to make a careful examination of the mouth, when

forced open under an anæsthetic. Gas and ether having been administered, it was seen that the lower teeth were sound, but that the third molar was partially erupted, there being apparently not sufficient room for its complete eruption. In the upper jaw were seen the three detached roots of the first molar, the adjacent gum looking perfectly healthy. It was decided to remove only the second lower molar. The patient, who was seen weekly for two or three weeks, and supplied with suitable external and internal remedies, derived no benefit whatever, and it was then determined to remove the third lower molar, and at the same time the upper first molar roots. This was satisfactorily accomplished by Mr. Woodhouse, Mr. Coleman administering gas and ether. This last operation appeared to some extent to mitigate the pain, and certainly allowed much greater freedom of movement in the lower jaw. The general health of the patient, however, became worse, until he was too weak to attend the hospital. His father called weekly to report of him, and on the last occasion stated that a swelling had appeared at the posterior portion of the palate on the left side. Learning this, Mr. Coleman got him at once admitted into St. Bartholomew's Hospital, under the care of his colleague Mr. Willett; the growth, which was no doubt of a sarcomatous variety, was, when seen by Mr. Coleman at the above hospital, of the size of half a mandarin orange, projecting from and behind the soft palate, the general cachexia, the rapid growth of the tumour, and the history, pointing to the fact that it had its origin in the immediate neighbourhood of the sphenoid bone, and perhaps was encroaching on its internal surface. An operation was deemed inadvisable, and the patient left the hospital.

(To be continued.)

WE have received information that, by the courtesy of the authorities, the Dental Hospital of Liverpool will be thrown open for clinical and other purposes, for the benefit of the British Dental Association whilst holding its Annual General Meeting in August next.

ON THE CONSERVATION OF CHILDREN'S TEETH.*

By MR. GEORGE BRUNTON, Leeds.

MR. PRESIDENT AND GENTLEMEN,—This is a subject which I have for many years felt to be very important—one which we shall do well to discuss with all the earnestness and zeal which we can bring to bear on this so far much-neglected subject, and it is a subject, gentlemen, which needs no apology for bringing under your notice, for is not the child the father of the man? and if the teeth of children do not receive all the care they require during childhood, what condition are they likely to be found in when maturity is reached? Moreover, it is admitted on all hands that there is great degeneracy of the teeth, each succeeding generation showing a softer type of tooth structure than the one which preceded it; this being so, are we not called upon at once to bend all our powers in the direction of conservative treatment? And while it is our duty to try and find out the cause or causes of this degeneracy, yet the duty which lies nearest to us at present is undoubtedly the conservation of those organs on which proper mastication, perfect speech, and to some extent at least good looks depend. If we are specialists in the healing art, we must not be content simply with the indiscriminate extraction of the teeth of the temporary set, consoling ourselves with the reflection that the permanent teeth will come by-and-bye and fill up the gaps made by our cruel forceps, but we must, if we would be what we call ourselves, try by every means in our power to preserve the first set until they are one by one in a natural manner replaced by their successors of the permanent set. Very few parents know that the sixth-year molar is a tooth of the second set, and the consequence is many thousands of those teeth are extracted because they get so hopelessly decayed there is no doing anything else with them. If parents only knew the important function of the sixth-year molar they would not allow their children to be robbed by medical men (who

* Read before the Midland Counties Branch of the British Dental Association, April 26th, 1882.

ought to know better), chemists, and (save the mark) Dentists, of those teeth the extraction of which cause disfigured jaws and impaired mastication. Of course I know and admit that many sixth-year molars have to be extracted to give room for the other teeth of the permanent set, and to prevent that lateral pressure which is found to be such a fruitful source of decay. But, gentlemen, important as are the functions of the sixth-year molars, I hold that the functions of the temporary molars are much more so, for reasons which I will lay before you.

I now hand round for your inspection two models taken from the same child's mouth at the same sitting; in the first you will observe the deciduous second molar is in place, note the large space filled by the molar compared by that required for the second bicuspid. All this extra space is required for and taken up by the first molar of the second set, as you will see by the left side of the model, where the first permanent molar has come forward and is now filling all the extra space hitherto occupied by the second deciduous molar; this shows the importance of preserving the molars of the first set until the bicuspids of the second set are erupted. I want you also to see the malpractice of extracting those deciduous molars when they might be retained by judicious treatment until their natural function is performed. The importance of this subject is well illustrated in Mr. Coleman's 'Manual,' and in Mr. Norman Kingsley's 'Oral Deformities.' If confirmative evidence were wanted in support of the statement that the sixth-year molar moves forward, I might cite the fact of the tendency that the sixth-year molar has to move forward when decay occurs on the distal aspect of the second bicuspid. Now the treatment to pursue is clear in this matter—*save the deciduous molars until the bicuspids are erupted*; as to the method of saving these teeth when decayed, stopping them will at once suggest itself. I would even go further than this, and suggest that when these teeth are decayed beyond the hope of stopping them, they be so treated that the roots remain, and to a certain extent preserve the much wanted space. The method of doing this, which I have used for some years, is a simple one, consisting of

dressings (repeated every second day) of cotton wool dipped in a solution of carbolised resin, to which one third of eucalyptus oil has been added. When the decay is not deep, but has spread over the crown, denuding it of enamel, the treatment advised by Mr. Coleman is good, viz. thorough cleanliness and the application of sal volatile and spirits of wine, which hardens the bone and prevents further caries.

In the treatment of children's teeth, it is always advisable to avoid giving pain if we would have them return willingly to us for further attention. Sharp excavators (I prefer the spoon shape) and Fleming's aconite are good helps in this direction. I seldom do anything of a painful nature to a child the first visit, but try to gain its confidence; that gained, a good deal can be done. A good amalgam on gutta-percha filling serves very well for teeth of the first set. It is not easy to apply the rubber dam for children, but I find the Osborne tongue-holder an excellent thing, keeping the mouth dry, and the tongue, although held out of the way, has plenty of freedom to move about inside the porcelain cup.

Many cases of irregularity may be put right by the patients themselves under proper direction. For instance, I had a case in which the upper central incisor was locked inside the lower teeth, which was brought out to its place by the child persistently pressing it outwards with the handle of a spoon. Much may be done by simple contrivances in correcting irregularities. Waxed floss silk, with very weak india-rubber rings adjusted so as to act slowly and allow the sockets to get firm and hold the teeth in place after they have been moved, is a favourite method with me. I would strongly deprecate the employment of regulating plates which have to be tied in, as more harm than good is likely to result by the action of pent-up foods and fluids of the mouth on the teeth covered by the plate. Accidents often occur to children's teeth. I was called to see a child that had fallen and struck its mouth against an iron fender, driving the left central incisor vertically into the jaw, so that all that was to be seen was the cutting edge; I concluded to leave the tooth in, and apply soothing lotions, and had the satis-

faction of seeing the tooth gradually come down to its proper place. I have seen many cases where three or four temporary incisors in the upper jaw were the only ones decayed, and could only account for it by the action of the india-rubber teats in bottle feeding. Extracting the teeth of children should, as far as possible, be done without pain, and for this purpose I find the application of dichloride of ethidine on cotton wool to the gums a good thing. When many teeth have to be removed, chloroform is, in my opinion, the best anæsthetic for children. I should like to say something about the *cultivation of fear* in children. As regards Dental operations, they are often taught to dread the Dentist; and, instead of looking upon him as their friend, they are virtually taught to regard him as their enemy. Now, this sort of thing may account, in some measure, for the dread of Dental operations in our patients in after-life. While we do all we can to diminish the dread of Dental operations, we should not forget to teach little patients the importance of thorough and regular attention to cleaning their teeth at night. A word in season should also be given to the parents on this head, and also on providing their offspring with food suitable for the formation of good bone. And in conclusion, I would recommend all to advise their patients to avoid the Dentists who advertise; there must be something revolting to properly constituted minds in the exhibition of those horrid Dental show-cases which disfigure our streets and railway stations, and, above all, let us by every means try to elevate our profession in the minds of the people.

THE CHEMISTRY AND PHYSIOLOGICAL ACTION OF MERCURY AS USED IN AMALGAM FILLINGS.*

By E. S. TALBOT, M.D., D.D.S., of Chicago, Ills.

(Concluded from p. 489.)

It is the accepted opinion of physicians generally that mercury uncombined has no constitutional effect. Dr.

* Read before the Illinois State Dental Society.

Atkinson said before the meeting of the American Dental Association in Boston, August, 1880, "You must combine the molecules of mercury with some other agent before they can have any affinity for the body at all. One who is familiar with the old method of making looking-glasses with tin-foil and mercury, knows that the workman would be literally saturated with it, so that he could not be capable of handling a gold or silver watch without its becoming amalgamated, and all this, too, without his health being compromised by the mercury so long as it remains in a metallic state."

The correctness of this theory may be questioned, as it has been proven that these workmen have been affected by the vapour of mercury when not protected by a veil over the mouth and nose.

Dr. Bartholomew, in his work on 'Therapeutics,' p. 177, says, "As used in the mechanical arts, by gilders and others, the fumes of mercury cause wasting, ptyalism, necrosis of bones, trembling, impaired intellect, and in women abortion." "Walter Pope mentions a workman who for six months had not handled mercury, yet he rendered a piece of copper as white as silver by rubbing it between his fingers." Parish says that long trituration of calomel increases its power to salivate. This is also applicable to all preparations of mercury used with an excipient medicinally. The homœopaths divide and subdivide particles, according to the required preparations, some of the radical members of the school claiming best results from the highest potencies, while the more conservative practitioners prefer a middle ground. They rub up pure mercury with sugar of milk into six different grades, the first containing one tenth grain of mercury to one grain of sugar of milk; the second one one hundredth grain of mercury to one grain of sugar of milk, &c., as before mentioned in this paper. These are the finest forms in which mercury is prescribed, and yet the severest cases of salivation and constitutional symptoms have been produced by these agents, on account of their being so readily taken up by the blood. Is it not a reasonable supposition that if poisonous symptoms are produced in propor-

tion with the subdivision of the particles of mercury, that the system will be more severely affected by the vapour of mercury, which is finer than any mechanical subdivision can be? Dr. Somers recalls an instance of a lady patient becoming salivated, the gums and mucous lining of the mouth inflamed and teeth loosened, by taking a second bath in which forty grains of the black oxide of mercury were used. He thinks she could not have absorbed one twentieth of the amount in the form of vapour.

As a forcible illustration, I quote the experience of the sailors on board the man-of-war "Triumph," which, in April, 1810, took from the wreck of a Spanish ship thirty tons of quicksilver, contained in bags of fifty pounds each.

In the course of a fortnight some bags decayed and burst, the quicksilver mixing with the bilge water, the emanations from which coated nearly all the metal about the ship. Nearly all the crew were salivated.

In order to ascertain the effect of the vapour of mercury, I have employed it in a series of experiments upon plants and animals.

Experiment No. 1.—While conducting my experiments in the laboratory I was frequently visited by a family of roaches, who appeared to take an interest in my operations. Suddenly they all disappeared, and it immediately suggested itself to my mind that their sudden departure argued favorably in the question of utilising them in my experiments. I took four two-ounce bottles and put in No. 1 pure mercury; No. 2 amalgam scraps six months old; No. 3 fillings from two to ten years old; No. 4 fillings sixteen years old. After placing a roach in each bottle I tied a piece of cloth over the mouth in order that the air might circulate. Evidently the bugs were not fond of mercury, for they clung to the tops of the bottles as long as life lasted. Roach in No. 1, containing pure mercury, died in three days; roach in No. 2 was next to follow; roach in No. 3 lived a few days longer; and in No. 4 outlived them all by several days.

Experiment No. 2.—I prepared three bottles. The No. 1 contained ten grains of pure mercury; No. 2 contained an

amalgam filling three months old; No. 3 was an empty bottle. In each of the bottles I put two roaches. In two days one in the bottle containing pure mercury died; the remaining one in the same bottle lived nine days from the time it was put in. In the bottle containing the amalgam filling one roach died in four days, while the other one died in eleven days; while those in the empty bottle lived fifteen and sixteen days.

Experiment No. 3.—On February the 9th I placed an amalgam filling at the base of a sensitive plant. On examination, about the fourth day, I discovered that the extremities of the leaves had changed colour and were dry and brittle, like the leaves in early autumn; gradually the whole leaf was affected, and at the end of ten days the plant was dead, notwithstanding the care and nourishment it received.

Experiment No. 4.—In a four-quart glass jar I put about four ounces of mercury, and made a platform of wire gauze, fastening it two inches from the bottom of the jar. I placed a Guinea-pig in the jar, and covered the top with gauze. Twice each day I removed him for exercise and nourishment. He thrived well for ten days, but at the end of that time he commenced to droop, and refused food and water. He became emaciated and trembling; the body and limbs were cold. He lingered along for two weeks and died.

Experiment No. 5.—I administered six grains of *mercurius vivus*, first trituration, to a dog with his supper, and repeated the dose next morning with his breakfast. The blood and liver were examined under the microscope in the evening, and found to contain globules of mercury.

It is the opinion of many eminent scientists that mercury inhaled into the lungs produces a greater effect than when taken into the stomach. Among this number, Prof. Stille, in his 'Therapeutics,' vol. ii, p. 789, says:—"Of the several modes by which mercury is made to enter the body, inhalation most speedily produces the specific influence of the medicine." Claude Bernard, late professor in Le College de France, makes the same statement in one of his lectures. This is readily understood when we consider that the drug taken into the lungs in the form of

vapour is distributed over a large surface and brought in direct contact with oxygenated blood, and thus carried directly to all parts of the body.

Mercury taken into the system in small quantities long continued manifests itself in a variety of ways. One of the first symptoms noticeable is an increased flow of the secretions of the body—salivation being the most striking—the glands becoming inflamed and the mucous membrane tender. The gums tumefy and change in colour to a dark rose tint; the tongue is swollen; the patient not only experiences an unpleasant metallic taste, but the breath becomes impregnated also. Sometimes extensive ulcers attack the throat, gums, and cheeks; œdema of the glottis, with difficulty in breathing and swallowing. The digestive apparatus is involved, with loss of appetite, nausea, and vomiting, and frequently pain and tenderness of the stomach; the bowels loose, and often bloody stools. The fatty constituents are removed, and the patient becomes emaciated. No part of the body is more affected by mercury than the nervous system; the body trembles; sometimes one limb, and again both limbs contract. A sense of coldness and occasional chills are experienced; often neuralgic pains are felt, particularly around the motor nerves; mental debility and loss of memory. These are some of the many symptoms caused by the inhalation of the vapour of mercury.

There are in the market many varieties of amalgams. Evaporation does not depend upon quality or age, but all amalgams will send off the vapour of mercury. This has been proved conclusively by its destruction of animal and vegetable life, and by chemical tests. Evaporation is facilitated by an increase of surface, consequently a greater amount of vapour would rise from several small fillings than from one large filling. The facility with which mercury is taken into the lungs by continued inhalations, and the rapidity with which it enters the blood, requires less mercury to produce systemic effects than when taken into the stomach. In order to produce systemic effects from metallic mercury it must be rubbed up with an excipient, to reduce the particles to a size capable of entering

the capillary system, or it must be taken into the lungs in the form of vapour.

Dr. SPALDING said that the results of the experiments described in the paper were in accordance with the homœopathic theory that infinitesimal quantities, if in extreme subdivision and continuously administered, are capable of producing marked constitutional effects; and he proceeded to explain the scheme of homœopathic dilutions, by the American or decimal, and the European or centesimal scales.

Dr. BLACK asked Dr. Talbot if he had repeated the experiments with the same portions of mercurial preparations that had been once used?

Dr. TALBOT.—I have not, since the amount of mercury contained in the preparations appeared to make little or no difference in the results. I went home from the meeting of the Society last year dissatisfied with what our friends from St. Louis had said on the amalgam question, and determined to find out, if possible, what are the facts of the case. I have spent much time, and taken great care, in making these experiments, and the results have been quite different from what I expected they would be when I began to make them.

Dr. TEMPLETON.—I have supposed that the coating of sulphide of silver, or of oxides, upon the surface of amalgam plugs would be impervious to the vapour of mercury, and prevent its evaporation from a plug.

Dr. CUSHING.—We should bear in mind that these experiments out of the mouth are not conclusive proof of what takes place in the mouth. The condition of the oral cavity may greatly modify chemical action, and conclusions based solely upon experiments made out of the mouth may prove misleading.

Dr. BLACK.—Dr. Talbot has proven that vapour of mercury is given off from amalgam plugs, but the most important fact set forth in the paper is the effect produced upon the cockroaches. It appears from the experiments upon them that the vapour of mercury is injurious to animal life. It remains to continue the experiments for the purpose

of ascertaining what effect it has upon higher forms of animal life. There are thousands of people going about with amalgam plugs in their teeth, who seem not to suffer from it, and there are many, also, who, on careful examination, *do* appear to suffer from some cause. It is important to ascertain, if possible, just what effects the mercury in amalgam plugs is capable of producing.

Dr. SPALDING.—I am glad that these experiments have been made. They teach an important lesson in therapeutics. The evaporation from amalgam plugs in the mouth is continuous, since a uniform temperature is constantly maintained, or nearly so. The vapour of mercury will pass readily through water, or any of the metallic oxides. Many people can take continuously such very small quantities of mercury without injury, while others are susceptible to harm from the continued exhibition of these minute quantities. I think the experiments are as conclusive as any can be that have covered no wider field, and I hope they will be continued and extended.

Dr. HARLAN.—Will mercury be absorbed through the hand by mixing amalgam in it?

Dr. SPALDING.—Probably not, the subdivision of the particles of mercury not being minute enough.

Dr. TEMPLETON.—Will a gold plate worn in the mouth of a person saturated with mercury absorb enough of it to interfere with soldering if it should need mending?

Dr. SPALDING.—Yes; I have had a gold plate presented for repair that was whitened with mercury, and the man who wore it was so saturated with it that particles of mercury could be pressed out of the mucous membrane of the mouth and gathered together in advance of a spatula passed over the surface, so that the globules could be seen.

Dr. TALBOT.—That mercury can be absorbed through the hand is probable, since some diseases are treated by rubbing mercury under the arms, &c., for the purpose of having it absorbed into the system. Stille mentions a young lady who was so saturated with mercury that it came out through the skin with the perspiration, and could be gathered in globules upon the surface of the skin.

Dr. BROPHY.—This is the first time, to my knowledge, that the amalgam question has been properly presented, and these experiments furnish the first explanation that has been given as to how the mercury from amalgam plugs can get into the system. They show that mercury may evaporate from plugs and be inhaled into the lungs or absorbed through the tissues of the mouth, so as to produce injurious effects in some cases. We believe the mercury is oxidised and goes into the system as an oxide, though some suppose that it goes through the system as pure mercury, acting by its presence. I can confirm all that Dr. Talbot said about the case in his practice, having consulted with him in regard to it.

Dr. DORN.—Has any one seen gold fillings that were affected by the vapour of mercury from amalgam fillings in the same mouth?

Dr. TAFT.—I am gratified with the course that this discussion has taken. I have never yet made an amalgam filling. The old discussion of this question thirty years ago made such an impression upon me that I have never used amalgam. These experiments and the conclusions derived from them have been put forth here as being entirely new, but Dr. Watt and myself conducted a series of experiments twenty-five years ago, which were sufficient to show that there is evaporation of mercury from amalgam plugs, and that the vapour of mercury is very subtle and penetrating. Some persons will tolerate it with entire impunity, others suffer somewhat from the effects of it, and a few suffer seriously. It is insidious, and in many cases the cause of the trouble is never discovered. There are many hidden affections and obscure diseases that physicians cannot understand, and which baffle their skill. In some instances amalgam fillings play an important part in the production of such affections. It would seem that in the vapour the particles of mercury are divisible almost to the atomic condition, and are consequently in the condition to be absorbed and diffused with the greatest possible readiness, and to produce the greatest effect with the smallest quantity. Mercury will evaporate at ordinary temperature anywhere

unless sealed up in an iron vessel. The evaporation being faster, of course, the higher the temperature. Many have supposed that the evaporation from plugs will cease after a time, but the experiments given here show that it does not. It oxidises readily in the air, and if taken into the body in vapour it is very strange if it is not oxidised; but how could Dr. Spalding press it out of the gums in metallic globules if it did not remain metallic? I have seen gold fillings and gold plates whitened in mouths containing amalgam plugs. This would not be likely to be caused by medicines containing mercury in combination. The effect upon the system will be exceedingly various in different cases. Many seem to suffer no inconvenience, and yet who can say that any who have it are wholly free from its injurious impression? Many suffer from it in a more or less marked degree without being aware of the cause. Others suffer much when the cause is easily traceable to amalgam fillings. To the close and intelligent observer such cases will frequently appear. The behaviour of amalgams is very different in different mouths, and in the same mouth at different times. Subtle influences affect amalgams oftentimes in a mysterious way. This, with a number of other objectionable features, has prevented me from using it.

Dr. SPALDING.—It has been recently observed, after the administration of the salts of mercury in large doses, that the mercury could be recovered from the blood in metallic form. This fact raises the question whether the therapeutic effects of mercury are not always due to its action as a metal, and whether its use in the form of salts is not mainly advantageous by reason of the state of division in which the mercury is found after decomposition of the salts. The particles of the metal seen in the blood are of course microscopic, and are, indeed, very minute, requiring a high magnifying power for their discovery.—*Missouri Dental Journal*.

A CORRECTION.—In "A Correspondent's Reply," page 518, third line from top, *read* consistently *for* constantly, and on line 17, same page, the sentence should read "*as things have been and are, not as they will be.*"

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LONDON, JUNE 1, 1882.

A BENEVOLENT FUND.

ONCE again has a provincial meeting become prominent by overcoming difficulties apparently insuperable in London, and to the end of time will the name of John Sugden Crapper be associated in all honour and charity—as its practical founder—with a Dentist's Benevolent Fund that must in the not distant future be called into existence. We are aware that the subject is not new, and has already been whispered even at the British Dental Association, but only to be hushed again into silence, to await some future opportunity when matters of essentially far *less* importance have been accomplished.

This gentleman, of large heart and sympathy with the afflicted—unaware even that such safely hidden whisperings had taken place—came forward at the meeting of the Midland Counties Branch of the British Dental Association, held last month, and read a short, unassuming, but practical paper on the subject (which will be found at p. 521), and showed that he was earnest in the matter by offering the “nest egg” as soon as anything could be brought into tangible form. His paper was wisely entitled “*Suggestions on the Formation of a Benevolent Fund*,” his practical mind at once grasping the fact that such a fund to be of real service must be universally supported, if possible, and that one man's mind was not sufficient to meet the demands.

Few of the members of the Dental Association, we expect, know anything of his *suggestions*—except such as may be readers of this journal—as either by carelessness, culpable

negligence or, worse still, deliberate suppression, the official journal of the Association—which the Honorary Secretary claims as “*representing the Association*”—omitted to mention the *subject* of Mr. Crapper’s paper, either in its announcement of the meeting (April issue, p. 156), when it simply put “Specimens and Suggestions,” although the official “Order of Proceedings” adds “as to formation of a Benevolent Fund,” or in its account of the meeting (May issue, p. 205), where it only says “Papers were read by Messrs. Murphy, Nicol, and Crapper.” Six gentlemen read papers at that meeting. To Mr. Crapper alone is accorded the distinction of being reported *without a title*. Why? Perhaps it might be considered presumptuous for us to suggest, so we forbear and leave the official mouthpiece to explain how it considers this treatment fair to gentlemen whom it professes to represent.

It is a curious coincidence that at the very time when this subject is brought so prominently into notice, we are requested to make an appeal to the generosity of the profession on behalf of a young widow left totally unprovided for, with five children to support, the eldest of whom is but ten years of age. This distressing example of the absolute necessity of a fund to meet such urgency, comes so recently under our notice that at present we can only briefly allude to it, not having had time to inquire into its merits and details or find who will undertake to see that any sum raised shall be expended to the greatest advantage. We trust, however, in our next issue to be in a position to do so, for benevolence to be serviceable should be prompt. We can only say now, that Mr. George Weaver, L.D.S. Eng., in whose employ the deceased was last (for he was an assistant), writes, “The case is a deserving one, the poor fellow worked till within the last few weeks or two of his death. He was very steady and industrious.” We trust to have the aid of our contemporaries in this matter, and that the profession will show, in a most practical manner, that even if slow to move in a subject so important as a “Benevolent Fund,” it is not

insensible to the necessities of those who, through uncontrollable misfortune, suddenly need its aid and sympathy.

The 'Lancet,' in alluding to our notice of a paper the subject of remarks on the "Limitation of Dental Surgery," made at the Odontological Society at its April meeting, makes observations which, perhaps, it would not have done had they not been based on part only of the facts in the text. This gives a most disadvantageous aspect to the subject; the whole circumstances should be considered in a criticism of the kind and the "whole truth" recorded. The small tumour which was removed was not one of the jaw *simply*, but connected with and without doubt primarily arising from the roots of the tooth which was extracted.

However, the gist of the observations is altogether outside the question: What are the quantities of the collateral branches of medicine that Dental Surgery includes? The profession ought to know something of this debateable ground. The question is a very important one and worthy of the most careful consideration of a profession that claims to be scientific.

Again, the chief question arising out of the text of the paper was: "Was the operation, under all the conditions cited, one of Dental Surgery? not, "Was a person with or without this or that qualification justified in performing it?"

"WE CANNOT SEE THAT THIS (*accuracy* of public statement) IS A MATTER OF THE SMALLEST PRACTICAL IMPORTANCE."

This we regret to say is the self-confessed morality of our contemporary, the 'Journal of the British Dental Association.' This unblushing statement—which will be found in its May issue (p. 238)—may perhaps serve in the future as a most useful key to the interpretation of much of its policy and many of its statements, and should never be lost sight of or disregarded either by its readers or its critics.

Its self accusation arises from a circumstance, in itself so trivial, that were it not for the terribly damaging admission it has extracted, it would be unworthy of a second thought. In its April issue (p. 188) it thought proper to remark on so uninteresting a subject as our internal arrangements. The statement being both *erroneous* and *misleading* we forwarded the following letter :

"To the Editor of the 'Journal of the British Dental Association.'

"SIR,—Please insert this to correct an erroneous and misleading statement which appears in the annotations of your last issue. You say : "The gentleman who *has* just accepted the editorship of the 'British Journal of Dental Science' *will be* the fourth who *has* occupied that position within the last two years. What "*will be*" I am unprepared to say, but as to what *is* I can state that I am but the *third* in some *three and twenty* years, and, I believe, the fifth from its commencement, more than a quarter of a century ago. I should be very sorry for the 'British Journal of Dental Science' to receive credit beyond its due, and in this respect it has, I know, been completely outstripped by your own journal, which seems to have had the same number during an infinitely shorter existence.

Yours, &c.,

"May 7th, 1882.

"EDITOR 'BRITISH JOURNAL OF DENTAL SCIENCE.'"

which not apparently meeting its views (or sentiments) it first claimed that its statement was *without importance*—pleasant reading for its subscribers—and evidently thought *its own* internal arrangement an undesirable subject of criticism, by remarking on the latter part of our letter "How many editors" it had had, was "altogether beside the mark." On our still requesting the insertion of our correction it showed (in anticipation) that its astounding sentiment (already quoted) was no myth, by writing it was "quite impossible to make room for it;" proving its assertion by inserting a different paragraph occupying *just as much space*. This is the Journal that professes to represent the members of the British Dental Association. They have our commiseration.

WE have been shown a most extraordinary document purporting to emanate from the "Wisconsin Dental College," the authenticity of which we earnestly trust can be denied, by the authorities of that institution, for the honour of our American *confrères*. It bears an embossed seal with the name of the college thereon, the Wisconsin post-mark, and is addressed to a gentleman residing in London. We subjoin a copy.

"WISCONSIN DENTAL COLLEGE. Incorporated under the Laws of Wisconsin.

D. B. Devendorf, M.D., Professor of Anatomy and Surgery.

George Morrison, D.D.S., Demonstrator of Operative Dentistry.

O. B. Merrill, D.D.S., Demonstrator of Mechanical Dentistry.

PORCELAIN PLATES A SPECIALITY.

Delavan, Wisconsin, May 8th, 1882.

Dr. _____

England.

Dear Sir,—Knowing you to be a regular practising Dentist, we send the WISCONSIN DENTAL COLLEGE ANNOUNCEMENT, hoping you will endorse our position, making merit the qualification for graduation regardless of time spent at the college. As is the custom of other colleges desiring representation to confer honorary degrees on worthy practitioners, enclosed find printed form which you can fill out and return. Should your statement meet the approval of the faculty, we will make you a member of this college, and confer on you the honorary degree D.D.S. (Doctor of Dental Surgery), and forward you an elegant diploma, with your name artistically hand printed (old English letter). This diploma is 17 x 22 inches, elaborately engraved, and printed on parchment Deed, with signature of the faculty and college Seal.

Fee for Membership, Honorary Degree, and Diploma, TWELVE DOLLARS. The amount may be sent by Post Office Order or Bank Draft, and the Diploma will be forwarded by mail; or if you prefer, will be sent by express, C.O.D.

Respectfully yours,

GEORGE MORRISON, PRESIDENT.

REFERENCE BY PERMISSION.—S. W. Mensie, Esq., Court Commissioner, First Judicial Circuit, Town of Delavan, County of Walworth, State of Wisconsin, U.S.A.”

By this it would appear that those desiring—such an unenviable distinction as this would make—the D.D.S., of Wisconsin, may, in all probability, possess themselves of that honour for the ridiculously small sum of something like 60s. ! without any further trouble, examination, or expense whatever, even for the “elegance” or “artistic” nature of the document. Some honorarium, we think, however, ought to be conceded for the thoughtful consideration of giving its exact size as well as the nature of its appearance, thus enabling intending “doctors” to have equally elegant gilt frames ready prepared against its arrival per mail. We must not omit either to give due credit for a “N.B” on the accompanying ORDER form, viz. “The act of signing this statement is not a guarantee that the degree will be conferred.” This seems to show that a latent conscience was almost awakened in the promoter of this abominable scheme. May it have full time to develop before what should be an honorable distinction is thus dragged into the mire.

Manipulative Miscellany.

STOPPING GAG.

MESSRS. C. ASH & SONS have a gag, designed and used by Dr. Finley Thompson, to keep the mouth open during prolonged cases of stopping, both preventing the possibility of closing and forming a rest for the patient. It is much like some of the gags used for operating under gas, consisting of two little metal trays, to be charged with gutta percha, with a pedestal between them; this pedestal is divided, one half being a tube and the other fitting into it, a spring within giving the two halves a tendency to elongate. The internal pedestal is tapped with a fine thread and has a screw nut working freely on it. As soon as the gag is placed in position the screw nut can be run down, and the more the mouth is opened the further can this be followed up, till it is quite impossible for the patient to remove the gag until the operator chooses to release it.

DIAMOND POLISHING DISK.

THE DENTAL MANUFACTURING Co. have introduced a diamond-powder polishing disc, fifteen sixteenths of an inch diameter, very thin, one side being flat and the other slightly convex, for use with the burring engine to polish gold fillings. Partly from its contour, but mainly from its new feature, that is, being semi-elastic, it can be applied to fillings in almost any position and produces a magnificent surface with little trouble and without itself becoming clogged with the particles of gold it cuts away. Its cut is so exceedingly fine, although rapid, that it causes the minimum of inconvenience or disagreeable sensation to the patient. It is equally useful for polishing the edges of the enamel of any chipped or ground teeth. A variety of other useful shapes are either

made or in course of construction, which together with the disc will form a most useful addition to the engine tools for stopping. After considerable, although limited, use we cannot detect that the cutting surfaces have become in the least deteriorated; this was the only point of doubt as to its utility, and severe tests, purposely given, only prove to its advantage.

WEE WEE WONDER VULCANIZER.

MR. J. RITCHIE, Great Marlborough Street, we omitted to mention in our last issue's notice, is both the designer of this compact little machine and manufacturer.

AMERICAN A. X. PINK FACING RUBBER.

THE request at the foot of the notice of this rubber (page 446), for the experience of those who have used it largely, has produced letters from many gentlemen, all of whom express their entire satisfaction as to its qualities, and further experiments of our own confirm what we were then able to write.

NEW METHOD OF TAKING DUPLICATE MODELS.

MR. WALTER WHITEHOUSE, 50, Parliament Street, S.W., has, with much perseverance and ingenuity, apparently perfected a system by which this most desirable object may be obtained with unerring certainty. We have never seen anything approaching it for absolute accuracy, no matter how sloping the teeth or deep the undercuts may be. At first we were rather troubled at its manipulation, but a little practice soon overcame this, and the results surprised ourselves. The apparatus consists of (1) a block of clay softened by such means that it never hardens or dries, and is therefore always ready for use. This is placed round the model to be copied in such manner that only so much of the teeth and palate are exposed

as may be required for use ; (2) an iron ring, something like a small casting ring, is then pressed into the clay sufficiently to form an air-tight union ; when (3) a most elastic substance, of the nature of gelatine, that does not shrink, having nothing to evaporate, is gently melted in a vessel for the purpose, surrounded by hot water, and poured over the surface of the model (previously oiled), until the ring is nearly full. This has to be left until quite set, when the model may be withdrawn, and in consequence of the beautifully elastic nature of the substance, every inequality, however slight, is faithfully reproduced, and if quick-setting plaster of Paris be used, several equally correct models may be taken from this one impression. For duplicate cases, &c., this invention seems to have overcome a difficulty experienced, we presume, more or less by every one.

HAZELINE.

MESSRS. BURROUGHS, WELLCOME, & Co. call our attention to this preparation of theirs as being of the greatest value in all cases of hæmorrhage, inflammation, or ulceration of the mouth. It is obtained from the witch hazel, but from the *green* bark instead of the dried bark as has hitherto been the case, and this they claim as a great advantage for its efficacy. If it is as successful for all these purposes as we have invariably found it—under its old title of “Tinct. Hamamelis”—in arresting alveolar hæmorrhage, it will be of great advantage, and from long experience of its use in that respect, we have no hesitation in recommending it for trial.

WE hail with pleasure a new monthly Dental publication, ‘The New England Journal of Dentistry and Allied Sciences.’ Its first four issues are in our hands, and from them we judge it will be carried on with vigour and spirit. Being owned and edited by a company of practitioners bound together for that purpose, we feel sure we shall derive both pleasure and profit from its perusal, and wish it all the success attainable by its undoubted merit.

Literary Notices and Selections.

IF DENTISTS KNEW.

If Dentists knew how much it cost
 To have an office cheap and murky,
 And knew how very much they lost
 By having things awry and dirty,
 There'd be improvement.

If Dentists heard us girls declare
 (As oft we do when we are nervous)
 We'd never sit in that great chair,
 When smaller, nicer ones would serve us,
 They'd get another.

If Dentists knew how we complained
 Of treatment harsh, unkind and heedless,
 And knew how very much they gained
 By just avoiding pain that's needless,
 They'd be more cautious.

If Dentists knew, or we dare tell,
 How unkept offices repel us,
 They'd make their places look so well—
 So tidy, clean and sweet—they'd spell us,
 And make their fortune.

—T. B. W.—*Items of Interest,*

AN EXCELLENT METHOD OF TREATING RUBBER DAM.

AFTER the piece is prepared for the mouth, both surfaces should be sprinkled with powdered soap-stone and well rubbed in by hand. The stone, as prepared for the shoe trade, known as "Paris chalk," is a good article, and it may be scented with something to disguise the sulphurous odour of the rubber that is so disagreeable to some patients. The rubber thus prepared will more readily pass between teeth that closely approximate than that as ordinarily used. It will be found that the rubber prepared in this way will not tear as easily about the apertures in application to and removal from teeth. A piece of rubber lasts much longer treated this way.

In cases where a series of operations at short intervals between the sittings makes it expedient, for the sake of economy, to use the same piece repeatedly upon a patient, the use of this soap-stone after washing and drying before laying it away will keep the piece soft and fresh. All kinds of rubber dam should be kept in a *very dark, cool place*.—*New England Journal of Dentistry*.

Dental News.

STUDENTS' SOCIETY OF THE DENTAL HOSPITAL OF LONDON.

ORDINARY MEETING, MAY 8TH, 1882.

ARTHUR S. UNDERWOOD, Esq., M.R.C.S., L.D.S., President,
in the Chair.

THE minutes of the previous meeting were read over and confirmed.

Mr. Morgan was balloted for and elected a member, and Mr. E. Norris was proposed for membership.

Presentations to the Museum were given by the following gentlemen:

Mr. W. Hern, L.D.S.—The maxillæ of a shark.

Mr. A. H. Tester—An upper molar with five roots and an abscess attached.

Mr. J. J. Andrew—A large and valuable collection of abnormal teeth, also a pamphlet on the 'Evolution Theory.'

Mr. H. Mahomed—a curious old bone denture.

Mr. A. Kirby—a model of perforate palate.

CASE OF NECROSIS.

Mr. J. J. ANDREW read the following notes of the case:

S. E—, æt. 4½, was brought to the Dental Hospital yesterday morning complaining of an aching tooth. The mother said she did not know until this morning of anything being wrong with the child's teeth, though she had been complaining of a sore eye. On examining the mouth the first temporary right upper molar, and a large piece of

the maxillary bone above and around it, was found black, dead, and denuded of both gum and periosteum.

The tooth and piece of necrosed bone were removed, and along with the bone came away, the partially calcified cap of the permanent bicuspid tooth, as well as a number of small chips of necrosed bone.

I syringed out the cavity with carbolic lotion and directed the patient to come again in three days.

The President and Mr. David Hepburn, L.D.S., made some remarks on the case.

A CASE OF PERFORATE PALATE.

Mr. A. KIRBY read the following notes of the case treated at the Bedford General Infirmary.

Mr. PRESIDENT AND GENTLEMEN,—Rather more than twelve months ago R. W—, formerly a sailor, aged about forty-five, attended at the Dental department of the Bedford General Infirmary, for advice respecting a large perforation in his palate. Several years ago the man had fallen from a spar on to a windlass, on the deck of his ship, and sustained a compound comminuted fracture of the skull.

He had previously to this time contracted syphilis, which he thought had been cured, but it again showed itself, and in consequence the wounds on his head healed very badly, and ulcers formed all over his head.

About two years before his coming to the hospital he had noticed a large ulcer on his palate which spread and eventually perforated both hard and soft palates and kept increasing in size.

On his admission to the hospital the edges of the perforation were very much ulcerated and inflamed, and from the mucous membrane of the cavity of the nose was exuded a very foetid discharge, which was so offensive that he was obliged to be sent into a distant room, while the other patients were seen. Extending down into the perforation in the palate was a considerable mass of necrosed bone which was not quite detached. The man was almost unable to swallow fluid and his articulation was most imperfect.

He had at this time several symptoms of syphilis, and was put (as an out-patient) under the care of one of the medical officers, who prescribed Pot. Iod. and a lotion of carbolic acid to syringe through the cavity of the nose; the lotion of carbolic was changed after trial for one of permanganate of potash.

He was seen several times at intervals of a fortnight and

rapidly improved under treatment. The ulcers healed and the necrosed bone became detached.

After about ten weeks' treatment the dead bone was removed through the perforation and mouth with a pair of vulsellum forceps.

Treatment was kept up for a fortnight longer when models were taken in composition, and a plate was made in vulcanite to cover the palate and perforation and supply several teeth which had been extracted. No plug was fitted into the hole, the plate simply being carried over it, slightly overlapping its edges. The plate was fastened to the molars, &c., by gold wires. Immediately on the introduction of the plate the man's articulation was wonderfully improved. With the removal of the dead bone, the cessation of the discharge from the mucous membrane, the man's improved articulation and general restoration to health, he was restored to a condition of comfort which enabled him to follow his business.

I hope the Society will do me the favour to accept a model of the case if they think it worthy of a place in their collection.

The President then called on Mr. A. H. Tester for his paper on "Closure of the Jaws," which we have transferred to page 536.

An excellent discussion followed in which the following gentlemen took part:—The President, Messrs. David Hepburn, L.D.S., C. Robbins, L.D.S., W. Hern, L.D.S., W. Harrison, H. Blackmore, H. Mahomed, C. Rose, J. Petherbridge, and J. J. Andrew.

A vote of thanks was accorded to Mr. Tester for his paper.

APPOINTMENT.

ARTHUR COUNCELL, L.D.S. Eng., has been appointed Lecturer on Dental Metallurgy to the Liverpool School of Dental Surgery.

ODONTOLOGICAL SOCIETY OF GREAT BRITAIN.

THIS Society will hold its next ordinary meeting on the 5th inst, when a paper will be read by Mr. Hunt, of Yeovil, on "Celluloid."

Correspondence.

[We do not hold ourselves responsible for the opinions expressed by our
Correspondents.]

ALVEOLAR HÆMORRHAGE AND ITS TREATMENT.

To the Editor of the 'British Journal of Dental Science.'

DEAR SIR,—It appears from several articles in your recent journals upon the above subject, that the value of chloride of zinc as a styptic is not so well known as it should be. It may, therefore, be well to state one's experience of its usefulness. For upwards of twenty years I have used zinc instead of the perchloride of iron in troublesome cases of hæmorrhage after extraction without a single failure, whether the bleeding has arisen from constitutional cause or otherwise. My plan of application is to pad both sides of the bleeding sockets with cotton wool, instructing the patient to hold with the point of the forefinger the inside pad firmly, so that the zinc cannot get upon the membranous lining of the mouth; then after drying up the blood momentarily, quickly press a pledget of cotton wool about the size of the fang of the tooth drawn or a little smaller, well saturated with chloride of zinc (that used with the oxychloride stopping is the best), carefully and firmly into *each socket*, dry the surface with another pad of wool, and if the blood should still ooze, apply a little more liquid zinc on the top of the pledgets (it is better *not* to change or remove the pledgets as it might produce more profuse bleeding). Put a coating of the oxide powder over the whole, and hold the finger, or a broad, smooth instrument, on the top for a minute or two; then let the patient rinse quickly, and if requisite wipe well the tongue and mouth, and all will be safe. The pledgets should not be removed for a day or two. In cases when the patient had neglected to return according to appointment, and had left the pledgets to come away of their own accord, I have subsequently found no mischief had resulted from the zinc. The more quickly yet carefully the sockets are closed up with the zinc and left undisturbed the less tedious the operation. All smarting passes off a few moments after the zinc has been applied. The gums become dry and leathery.

I am, &c.,

ALFRED ABEL.

Alexandra House, Princes Square,
Harrogate; May 26th, 1882.

To Correspondents.

1. Communications intended for insertion in the ensuing number must be forwarded to the Editor, at the Office, 11, New Burlington Street, London, W. by the 8th and 23rd of the month, and must be duly authenticated by the name and address of the writer.
2. We cannot undertake to return communications unless the necessary postage stamps are forwarded.
3. It is earnestly requested of our correspondents that their communications be written on one side of the sheet only; and we also beg to call particular attention to the importance of a carefully-penned signature and address.
4. All communications relative to subscriptions and advertisements are to be addressed to the Publishers, Messrs. J. and A. Churchill, 11, New Burlington Street, London, W.
5. The Journal will be supplied direct from the office on PREPAYMENT of subscriptions as under:

Twelve Months (post free) 14s. 0d.

Post-office Orders to be made payable at the Regent Street Office, to J. and A. Churchill, 11, New Burlington Street, W. A single number sent on receipt of seven (penny) stamps.

ANSWERS TO CORRESPONDENTS.

- C. MAYER, and } We will exchange with much pleasure.
 T. B. WELCH. }
 W. M. FISHER.—Your enclosure may do for future comment. We thank you for it.

Communications have been received from Messrs. J. S. Crapper, G. Cunningham, Alfred Abel, A. L. Littleboy, G. Brunton, J. H. Molloy, Burroughs, Wellcome & Co., W. Whitehouse, M. Pardo, T. B. Welch, C. Mayr, E. A. Councell, J. Dobie, C. M. Duplock, W. P. Sherwood, J. Richie, W. M. Fisher, R. W. White, J. Ward, C. Hunter, W. Harrison, C. W. Spalding, W. B. Pearsall.

BOOKS AND PAPERS RECEIVED.

‘Mechanical Dentistry,’ by Charles Hunter, Second Edition. ‘Dental Cosmos.’ ‘Items of Interest.’ ‘New England Journal of Dentistry.’ ‘Ohio State Journal.’ ‘Journal of the British Dental Association.’ ‘Le Progrès Dentaire.’ ‘Revue Odontologique.’ ‘El Progreso Dental.’ ‘Lancet.’ ‘British Medical Journal.’ ‘Medical Times and Gazette.’ ‘Pharmaceutical Journal.’ ‘Chemist and Druggist.’ ‘The Saturday Evening Guide.’

NOTICE.—We desire that it may be clearly understood that our pages are open to all for free expression of their views on matters connected with our profession. We only ask for terseness of expression and MODERATION IN TONE.

When otherwise unobjectionable, difference of political or other opinion will never be regarded by the Editor as a disqualification for the admission of any communication to the pages of the **BRITISH JOURNAL OF DENTAL SCIENCE.**

British Journal of Dental Science.

No. 346.

LONDON, JUNE 15, 1882.

VOL. XXV.

ON THE MANIPULATION OF VULCANITE ON THE PLATE AND TINFOIL SYSTEM.*

By Mr. A. LINDLEY LITTLEBOY, Norwich.

(Concluded from page 531.)

IF the artificial teeth are to be fitted to the natural gum, you require a slight alteration in the treatment of the case. Cut away the metal plate to allow the teeth to be fitted clear of the plate, and with a sharp-pointed knife cut the tinfoil to the edge of the plate in front, so that the teeth are free of the foil to divide the full size plate, and wax it to the inner plate, then fit the teeth to the bite.

You can now, if you like, try them in the patient's mouth. Oil the model as you did before, replace the foil and teeth, and run a little wax round the inside of the plate to attach the tinfoil, and remove it from the model with care. Turn the piece with its lingual surface upon a flat piece of wood, and cast plaster into the palate and over the teeth; when set, flask it in the upper part of the flask, and trim the plaster from the edge of the flask to the tops of the teeth, slightly covering them, so as to hold them firmly in position and prevent the vulcanite from getting under them. Now take a piece of foil and press over the palate and at the back of the teeth, allowing the edge to project as before, finish with a warm burnisher. Oil the plaster, and cast on the lower part of the flask, warm well, open, and remove the plate. Now you will find the use of the divided plate, as it allows the plate to be removed without any fear of disturbing

* A paper read at the Annual General Meeting of the Eastern Counties' Dental Association, April 26th, 1882.

the teeth, which in some cases I have found very troublesome, particularly when natural teeth intervene. You have, as in the other case, a tinfoil surface to vulcanize between. Before stuffing, burnish and polish with a soft cloth; the brighter the tinfoil the greater the polish upon the vulcanite piece when steamed.

The advantages you gain from this system are:—(1) A certainty of any desired thickness of the vulcanite plate, which cannot be attained with a wax plate, particularly in cases where the rugæ are well defined. (2) In taking the bite and trying in the teeth you have a firm base to work with, which will give you a better idea of the finished set or partial piece than with a base made wholly of wax. (3) The vulcanite is stronger and more elastic when vulcanized between tinfoil than plaster. (4) The palatal and lingual surfaces are in a polished state when the tinfoil is stripped off, and very little trimming and filing is required, therefore much time is saved in finishing the piece for the mouth.

Mr. Littleboy added that he had used this and no other system from the time he adopted it, sixteen years ago.

Mr. MUSGRAVE asked him if he found the suction as good as in the case of plates fashioned on the model.

Mr. LITTLEBOY replied that he had found it to be as good. In vulcanising on the model some unpleasantness might be caused by the plaster intermingling with the vulcanite. A certain amount of brushing and scratching was required to remove that.

Mr. MARSH inquired if Mr. Littleboy vulcanised upon a thin layer like that passed round for examination.

Mr. LITTLEBOY said that he did not. It was impossible to remove a plate in one piece, but it was easy to remove the divisions.

The PRESIDENT asked if as good and great adhesions from the suction pieces of the upper jaw were obtained as from the impression of a model in plaster of Paris.

Mr. LITTLEBOY replied that he had always found it to be so.

Mr. MARSH, referring to what had been said about the brushing and scratching required to remove plaster from

vulcanite manipulated on the model, said that the plaster could all be removed without interfering with the surface of the vulcanite by the use of cotton wool dipped in olive oil.

The PRESIDENT said that Mr. Littleboy's system, if it answered the purpose, would certainly save a good deal of time.

Mr. LITTLEBOY said that he had never experienced any difficulty in suction cases.

Dr. CUNNINGHAM asked Mr. Littleboy if he used a chamber at all.

Mr. LITTLEBOY said that he did not. He found chambers of little use when the piece was first put into the mouth. After six months' wear the chambers were useless. The mucous membrane grew into the chamber and took the place of the vacuum supposed to exist there.

Dr. CUNNINGHAM agreed with Mr. Littleboy. He had not used a suction chamber, and so far he had been successful in suction cases. A case might turn up in which he would again have to use springs. When he was in America he was struck by the remarkable fact that he never saw springs, except one pair that had been imported as a curiosity. It naturally occurred to him in practice to go on as long as he could without them, and he had been able to do so thus far. He had no special or particular mode of work, except in having made as careful an impression as it was possible to obtain. He did not suppose that he ever succeeded in taking a perfect impression—such a thing was unknown—but they tried to get as perfect a model as possible. Formerly he used plaster, but he had given that up for the extra soft or renovating composition produced by Stent, only he always used the new material in the way it was said it should not be used for the purpose of taking uppers and lowers, and with great success. Then he always vulcanised directly on the model; he took no counter-model. He had no such collection of plaster casts as was to be found in many places. He also used what might be termed as "Fulson's ridge." Americans had a knack of patenting. This man took a model, marked where the plate goes—just about the posterior edge—and drew a line. In the case of

a full upper he should draw a line from the second molar on the one side to the other side, arching it slightly, and then work another line at a greater or shorter distance from the border of the palatal surface of the teeth. He had a pretty broad line grooved in the plaster, leaving a rim or edge upon the top of the plate. A little practice soon enabled one to make these ridges, so that they could be put into the mouth without causing any wounding. They would gradually form a depression in the gum without any abrasion of the surface. If there was anything to cause abrasion it must be filed away. In some cases they would find that the ridges must be reduced to a minimum; in other cases they would be surprised to observe what tremendous ridges could be borne with comfort and satisfaction. Finding the great use of this in vulcanite cases he thought it would be a good thing if it could be introduced in gold. A trial of the same thing in hollowing out the cast was an utter failure. But he succeeded recently in obtaining from Messrs. Ash a half-round wire—the smallest possible half-round wire to be had—and he laid it on in the same way as he would plaster in a vulcanite case. Some trouble might be experienced from assistants, as soldering on the ridge was one of the worst things they had to do. The first case in which he tried this plan the work, to his surprise, went perfectly home, and did not require to be touched at all with the file. Though he had not many gold cases, as his practice in that branch had not hitherto been a large one, yet he could earnestly recommend this method to his fellow-practitioners. He was sure that this ridge system, if adopted by them, would meet with approval, for unquestionably it improved the suction in a wonderful way.

Mr. MUSGRAVE said that he had used the same description of groove for the last six months with very great success.

Mr. R. W. WHITE said that the use of the groove, or "the string," as some called it, acted splendidly where there was any thickness of gum. Where there was a hard back plate with no thickness of soft tissue intervening it was simply useless. The plate never went home.

Dr. CUNNINGHAM said that with vulcanite he frequently put in two ridges; he had put in three. With a second ridge there was one in reserve.

Mr. R. W. WHITE asked Mr. Littleboy whether he could rely upon assistants working the soft foil to the model without damaging the grooves, and especially the rugæ.

Mr. LITTLEBOY.—With care.

Mr. R. W. WHITE admitted that it could be done, but would assistants do it.

Mr. LITTLEBOY thought they would.

Mr. R. W. WHITE considered that the rough under surface was preferable. He had worked with tin plate for years, but generally with thinner material, layer upon layer, so that it was thick where required and thin in the centre of the palate.

Mr. MARSH showed a specimen done with the soft metal. Two layers of the soft metal were struck up and one layer of tinfoil. Afterwards the tinfoil was transferred to the counter-model.

Mr. LITTLEBOY asked whether with the soft metal the plate could be made use of for taking the bite.

Mr. R. W. WHITE.—Yes.

Dr. CUNNINGHAM remarked that in every case the rugæ ought to be reproduced on the lower surface. If it did not exist in the mouth an artificial one should be given. They were of service for articulation.

The PRESIDENT, on behalf of the Association, thanked Mr. Littleboy for his excellent paper which had led to such an interesting discussion.

HÆMORRHAGE.—Mr. Ormsby showed, at the Surgical Society of Ireland, a myeloid tumour of the right upper jaw of a woman aged sixty, which he had recently removed. The swelling of the jaw was noticed for the first time about last Christmas; since then it had greatly increased. It was removed by Fergusson's incision for excision of the lower jaw. Considerable hæmorrhage occurred during the operation, which was restrained by the use of the actual cautery, and plugs of wood, which were driven into the bone and left there.

CLOSURE OF THE JAWS.*

By Mr. ALFRED H. TESTER.

(Concluded from page 542.)

I am indebted to Mr. C. Robbins for the notes of a case of trismus which came under his treatment whilst acting as house surgeon at this hospital:

Eliza F—, æt. 26, presented herself at the hospital on May 29th, 1880 (recommended by a medical man at Red-hill), suffering from trismus.

State on admission.—There was a large swelling on the left side of the inferior maxilla, extending from the parotid region downwards into the neck; this swelling was hard and brawny, and somewhat tender on pressure.

History.—Patient states she has suffered severe intermittent pain in the region of the wisdom tooth for some considerable time. The swelling complained of was first noticed about three or four weeks previously, since which time the jaws have gradually closed to within a quarter of an inch in the front of the mouth, and the patient has consequently been unable to take anything but fluid nourishment during that period.

The mouth was examined with some difficulty, owing to the almost complete closure, and the left inferior wisdom tooth was found to be carious; this it was thought desirable to remove. Gas and ether were administered, and while under the influence of the anæsthetic the jaws were opened sufficiently wide to use a straight elevator, with which the tooth was removed.

Hot fomentations were ordered within the mouth, and patient directed to return in a few days. Patient returned at the end of a week, when the movements of the jaw were nearly normal, but the swelling complained of at first had not subsided. An exploratory incision was made in the sulcus external to the vacant socket, but this failed to reveal

* Read before the Students' Society of the Dental Hospital of London, May 8th, 1882.

an abscess. An external incision was then made into the swelling, opposite the anterior inferior angle of the masseter, which resulted in the evacuation of a small quantity of foetid pus. A poultice was then directed to be applied to the wound, and the incision was kept open by a tent of lint dressed with iodide of zinc. The wound rapidly healed, and mastication became again normal.

Permanent closure of the jaws may be caused by *cicatrices*. These may occur as the result of most of the forms of ulceration; the mildest form is that by which the necrosed fangs of the temporary teeth become exposed and penetrate into the adjacent cheeks, setting up considerable ulceration and swelling, followed by cicatrices, which bind the cheek to those points of the jaw. When this occurs the teeth or fangs should be removed, which is easily done by dividing the cicatrices with a lancet and removing the stumps with an elevator. It may also occur in a mild form of ulcerative stomatitis, but it is seldom of sufficient inconvenience to call for interference. But a more formidable form is that which is caused by profuse ptyalism and severe ulceration, followed by gangrene of the cheeks, lips, and jaw, and the formation of a firm, dense, unyielding, and inodular tissue, by which the lower jaw is closely and tightly pressed against the upper. It may also follow the exanthemata of young children. However induced the effect is not only inconvenient, seriously interfering with mastication and articulation, but is often followed, especially if it occur in early life, by a stunted development of the jaws, exhibiting itself in marked deformity of the chin, and in an oblique direction of the front teeth.

If the mucous membrane of the cheek be completely destroyed from one alveolus to the other in both, or merely on one side, the resulting cicatrix must necessarily tend to press the jaws more and more closely against one another, the depressor muscles of the lower jaw being incapable of preventing the contraction of the cicatrix. In some cases the fingers cannot possibly be put between the cicatrix and the rows of teeth, and very little side-to-side movement can be produced.

There are several operations which are performed in these cases. One is the excision of the offending substance, which, I am sorry to say, is unfortunately often followed by only the most transient relief, owing to the tendency in the parts to reproduce the adhesions, however carefully and thoroughly they may have been removed.

After the excision is effected, the patient must make constant use of the wedge, wearing it for months or years, so as to counteract the tendency to reclosure. Sometimes after the extirpation of the mass of cicatrix the application of some mechanical apparatus is used in order to drag the jaws asunder.

The simple division of cicatricial contraction within the mouth is of no good whatever, but when suitable apparatus is adapted to the jaws, so as to prevent recontraction, a very good result may with patience be produced in cases uncomplicated by destruction of the cheek itself. The only drawback is the pain which the patient must necessarily undergo during the after treatment caused by the adapting and fitting of the plates.

The silver shields made by Mr. Clendon, late Dental Surgeon to the Westminster Hospital, and adapted by him to the upper and lower jaws, are the best Dental appliances made to separate the cicatrices. The proceeding is best accomplished by placing the patient under chloroform and freely dividing the cicatrix from both maxillæ, and then forcing open the jaws and obtaining an impression of the defective side with Stent's material, taking care that some of it passes between the divided surfaces. Plates are then struck up, adapted to the jaws of that side, and firmly attached to the teeth if there be any, if not they should be kept in place by a strong spiral spring, the outer side of such plates passing well between the divided surfaces. The plates should be introduced while the patient is again under an anæsthetic, when the knife may be further employed if necessary. The plates must be worn continually for weeks, or even months, after their insertion, and in addition to this it may be necessary to retain between them some elastic material.

The effects of the shield is not only to prevent adhesions between the inside of the cheek and alveolus, but to re-establish to a great extent the sulcus of mucous membrane at the base of the alveolus. Mr. Heath has had several cases in which the shields have been used successfully.

In some cases where the result of division would be of no benefit, Professor Esmarch's operation is performed, which is the removal of a portion of the lower jaw in front of the contraction, which result is the formation of an artificial joint, which gives to the other half of the jaw some, although a limited motion.

Professor Rizzoli, of Bologna, modified Esmarch's operation by merely cutting through the jaw and inserting a piece of gutta percha between the cut surfaces of the bone, with a view of preventing their union, and had several successful cases.

Dieffenbach performed the operation of making an artificial joint in the ramus behind the contraction, but without success, since the impediment lies more forward, and it is not removed.

Permanent closure of the jaws may be caused also by the occurrence of an osseous lamellæ between the two jaws, but this is very rare, and finally immobility of the jaw may be caused by the pressure of a tumour, especially if it occupies the parotid region so as to make a direct impression on the temporo-maxillary joint.

I will now relate to you the notes of a case of closure of the jaw by cicatrices, caused by cancrum oris, under the care of Mr. Lawson at the Middlesex Hospital.

It was the case of a young girl (C. H—, æt. 19), who stated that when she was two years old she had scarlet fever, with ulceration of the cheeks and gums, and has only been able to open her mouth very slightly ever since.

Nine years ago the patient was in the hospital, under Mr. Lawson, with necrosis of the inferior maxilla, from which some dead bone was removed.

On admission the patient was very healthy and well nourished. On the left side there is a scar beneath the horizontal ramus; the mucous membrane of the cheek, on

left side of the mouth, is adherent to that of the alveoli, so that the mouth can only be opened very slightly, the teeth being separable for hardly half an inch.

Under chloroform Mr. Lawson removed a piece of the lower jaw just to the right of the symphysis, which was done by extracting three of the incisor teeth, after which an incision was made parallel to and underneath the right body of the inferior maxilla, extending on inner side to the median line; the tissue being dissected away from the bone a long, narrow saw was used, and a wedge-shaped piece removed. By the application of gags and wedges she was enabled to open her mouth fairly well, and can now masticate.

The last cause of closure of the jaws to which I will call your attention is that from *anchylosis of the temporo-maxillary articulation*. This form is less common than that due to contracted cicatrices, and is caused by injury to and inflammation of the temporo-maxillary articulation. The utility of the joint may be destroyed by soft anchylosis the result of inflammatory adhesions or by complete bony anchylosis of the lower jaw to the temporal bone.

It occurs generally as a sequela of certain diseases, as scarlet fever, scarlatina, measles, typhoid, or it may be due to chronic rheumatic arthritis. There are no marks of cicatrices either in the mouth or externally, the digestive muscles are fully developed, neither is there any unusual rigidity of the masseters or temporals.

The patient generally finds that the temporo-maxillary articulation becomes stiff, associated with deafness and discharges from the ears, and sometimes hears a grating sound in moving the jaw, which is not heard externally. There is no external deformity.

Here we have, in fact, to deal with a joint in which there has been inflammatory mischief at some previous time, with resulting contraction of the surrounding ligaments and tendinous structures. The treatment of cases of anchylosis is eminently unsatisfactory when caused by chronic rheumatic arthritis. Beyond the use of counter irritation to the neighbourhood of the joint, and the administration of iodide

of potassium in the hope of checking periosteal inflammation, little can be done. If the ankylosis is due to the *contraction of surrounding ligaments and tendinous structures*, one of the methods of treatment in such cases is the same as is usually performed in like conditions of stiff-knee, namely, to divide the ligaments in such a way as to release the joints. It may be done by passing a narrow tenotomy knife into the temporo-maxillary joint on each side, immediately in front of the temporal artery, which lies in the interspace between the neck of the condyle and the external ear, pass the knife freely round the condyle as far as is deemed prudent, dividing completely the external lateral ligament of the joint, and also completely or partially the insertion of the external pterygoid muscle, keeping the back of the knife towards the temporal artery, carefully measuring the depth of the incision so as to avoid the middle meningeal artery. By so doing the joints at once yield to the gag. As a rule no untoward symptoms beyond a little soreness, swelling, and tenderness about the joints occur.

This operation is preferred by some to Esmarch's and Rizzoli's plan, but it must be performed cautiously.

When the ankylosis has become *complete* the question will arise as to dividing the bone or resecting the joint; the former seems easier and safer since it would almost be impossible to saw through the articulation itself. It may be done without any external incision through the cheek by dissecting up the mucous membrane and the masseter muscle, so as to introduce a narrow saw or strong bone forceps, and divide the ramus as high up as convenient, and thereby establish a false joint.

Sédillot mentions that in a case of true ankylosis M. Grube carried a straight chisel through the mouth to the neck of the jaw, which he broke by hammering. Some months after he divided the masseter subcutaneously, and the cure, by the formation of a false joint, was permanent.

With the kind permission of Mr. Davies Colley I will relate the notes of a case under his care at Guy's Hospital, which I had the opportunity of seeing. It is the case of *fibrous ankylosis of the temporo-maxillary joints; forcible*

separation; excision of the right condyle; resection of the left condyle; improved results; good movement.

The patient was a lad, æt. 12; had had scarlet fever three years ago, at the same time two abscesses formed, one on each side and a little below and in front of the ear. The one on the right side was opened, the other burst of itself; after that he discovered that his lower jaw became less movable. Some teeth were extracted in order that he might take food.

On admission the patient could depress the jaw half an inch; side to side movement one twelfth to one sixteenth of an inch. The temporals and masseters felt contracting. Chloroform being administered, Mr. Colley, having slightly depressed the jaw by means of an elevator, succeeded in introducing a screw gag between the upper and lower molars of the right side; after having separated the jaws for a slight distance, introduced another screw gag in a corresponding position on the opposite side; by gradually tightening, the jaws were separated to the space of nine sixteenths of an inch. A cork flattened on the sides was substituted for the gag on the right side and the two gags removed.

A day or two after the jaws became gradually closer, and therefore a larger cork was inserted in place of the other. A few days later the boy could eat an apple, more voluntary up-and-down movement was increased. Two months after the operation the patient left the hospital having half-inch voluntary motion, one and an eighth inch with the gag; he could not close his teeth, and called every week to have the gag applied.

Six weeks later the patient returned and was operated on for ankylosis of the temporo-maxillary joints.

Mr. Colley first operated on the left side of the jaw by making an incision obliquely upwards from the lower border of the lobe of the ear, for from two to three inches parallel with the ear, dissection was then made down to the temporo-maxillary articulation, the periosteum scraped off from the neck of the inferior maxilla to a director passed beneath it. Mr. Colley, using the straight saw, sawed through the

neck, and being unable to remove the process on account of it being so firm and ankylosed to the joint, gouged away portions of the bone from the two divided ends of the maxillary to prevent bony union. Similar incisions being made on the right side and a dissection to the joint as on the opposite side, the neck was sawed through and the condyle removed. The edges were brought together and the patient removed to bed.

A few days after the operation, when the healing was perfected, the patient could open his mouth half an inch and increased it to one inch, was discharged having very free movement in temporo-maxillary joints, can close his teeth and crack nuts.

In conclusion, gentlemen, I beg to thank you for your patient attention to what I fear has been rather a dry subject, and I shall now be pleased to listen to any one who may have had any of the above cases under their treatment.

THE RELATION OF DENTISTRY TO MEDICINE.

By Dr. W. W. ALLPORT.

IN the course of an address delivered at the banquet of the Michigan State Dental Association, on March 31st, 1882, and reported in the 'Dental Register,' Dr. Allport said :

To define this relation is not an easy task. The status of law, medicine, and divinity, as well as the various mechanical pursuits, are well defined, not only by those engaged in them, but by the public at large. But this is not the case with what is known as Dentistry. Even those who practise it are not fully settled as to whether it is a mechanical pursuit, a profession by itself, or a department in medicine; and the facts in regard to its practice fully justify this undefined position. If I were asked whether

Dentistry was a mechanical business, my reply would be "yes." Or, if the inquiry were whether it constituted a special department in medical practice, I would still answer "yes." If asked whether it were a calling by itself, as many claim, I would also reply "yes"—according to its teaching and practice.

But how, you ask, can the same answer be given to these seemingly contradictory inquiries? To this my reply is, when a man practises what is popularly known as Dentistry, such as removing tartar from the teeth, preparing cavities in teeth and filling them, and making sets of artificial teeth, no matter how well these operations may be performed mechanically, if he is ignorant of the cause of Dental diseases and the medical science essential to their proper treatment, he is a mechanic and nothing more, as a large proportion are. In this case, so-called Dentistry is in no way related to medicine. If, on the other hand, the practitioner is medically educated, is conversant with the cause of the diseases he is called upon to treat, and the relation they bear to associate parts in the manifold reflex actions of the teeth upon other portions of the body, and the action of remote organs upon the teeth and their appendages, and if he brings the same intelligence to bear in the treatment of Dental diseases that the ophthalmologist brings to bear upon the treatment of the eye, or the surgeon brings to bear upon the treatment of other surgical operations, which many do, then he is a special practitioner in medicine with all that the term implies. In *this* case, Dentistry bears a most intimate relation to medicine.

But if he has sufficient mechanical skill to construct the simpler kinds of mechanical Dentistry reasonably well, and possesses tolerable, or even marked skill in the mechanical manipulation of filling teeth, in what is known as operative Dentistry, and has just enough medical knowledge not to be a physician, then I suppose it would be considered that he belonged to a distinct calling—our glorious profession.

The anomalous and strange position which our calling occupies at the present time will not be wondered at when we consider its history.

It is said, and generally with truth, that first impressions are the best, and when Dr. Harris was impressed with the idea that the diseases and treatment of the teeth should be taught in medical colleges, and that Dental Surgery should be made a specialty in medical practice, he was undoubtedly correct; and when a medical college refused to establish a chair for that purpose, future progress in Dental science made the establishment of Dental colleges a necessity. Hence, it was not from choice but necessity that our present system of Dental teaching was inaugurated, and it is not impossible that the advance in the science and practice of Dentistry has so far been quite as great under this system of teaching as it would have been had it at *first* been connected with medical colleges; and, under all the circumstances, we most certainly have just cause for congratulation that our Dental colleges have done so much and so well what they have done, for there is no question that the proper practice of Dentistry in its two departments has now become so complicated—the one with mechanics and art, and the other with mechanics and medical science—and the proper practice of each has become so intricate that there are few indeed who possess the natural gifts or could acquire the necessary and varied skill for the proper practice of both; and the further attempt of our Dental Colleges to teach both to the same individual, and to make a partial qualification in each essential to graduation, and the subsequent attempt on the part of these graduates to practise both departments only serves to dwarf both.

Proficiency of attainment in these two dissimilar vocations in the time now allotted to their study is utterly impossible. When properly learned and practised, one should be classed as a mechanical art, the other as a medical specialty.

The proper practice of Dentistry as a distinct calling requires three leading and well-marked natural gifts—mechanical talent, artistic feeling, and the ability to comprehend medical science—three qualities seldom found in the same individual. The first is mechanics; this is required is what is known as mechanical and as operative

Dentistry, and without which more than a moderate success in either would not be possible. But from this common ground their lines diverge and they have but little, if anything, in common. In the mechanical or prosthetic part of Dentistry mechanical talent should be supplemented by the same gifts which would make either a sculptor or a painter; and these gifts should be cultivated by art studies rather than the medical studies essential for the Dental Surgeon.

Artificial dentures have three uses: mastication, aids to speech, and artistic or natural appearance in the mouth. Their fit and usefulness depend entirely upon a knowledge of the principles of mechanics and their correct application. A proper construction of artificial dentures, so as to aid speech, involves a knowledge of anatomy and the action of the vocal organs, a lack of which knowledge will explain the reason that so many sets of teeth are impediments instead of aids to speech. Their natural appearance in the mouth depends entirely upon the application of principles of art, which are distinct from Dental Surgery.

Proficiency, therefore, in prosthetic Dentistry requires study and skill far too great to be coupled with or tacked on to the tail of any department of medicine, the attempt to do which has rendered it simply as a mechanical business almost a disgrace; and I will venture the assertion that there is not at the present time, as generally practised, a class of mechanical business so poorly followed, or that falls so far short of its possibilities as that known as mechanical Dentistry. I will not except ready-made clothing or boots and shoes.

Now, we all know that for full sets of teeth there is nothing that will compare with what is known as continuous gum teeth, and of the 12,000 Dentists in the United States there are not 200 who can do this style of work properly, or even acceptably—and I doubt if there are 100. And there are not 1000 who can creditably meet the various requirements of full and partial cases on gold plate. And yet we all know that when these two kinds of work are properly done they are far superior, in most cases, to rubber or

celluloid. Nor is this condition of things to be wondered at when we remember the skill that is required in putting up this better class of work, and the time and attention that is given to learn it.

Why, Mr. President, a man cannot learn to put up good gold or continuous gum work, even mechanically, to say nothing of its art, in less than two years, and he may do nothing else. But when is added to the mechanical part the selection and arrangement of teeth in the mouth to give a natural appearance, though he may possess an artistic gift, three years is as little time as should be devoted to learning it; and it is utterly impossible for any considerable number to learn the details and acquire skill in mechanical Dentistry, and at the same time gain such a knowledge of medicine and acquire such skill in the treatment of dental diseases as will make them proper practitioners of Dental Surgery in the time usually devoted to it in the accepted mode of teaching.

For the credit of ourselves, as well as for the best interests of the public, this way of things should cease. But it never will so long as it is taught in its present manner.

There is enough in it to engage the entire time and attention of the finest mechanical and artistic talent, and it will never be elevated to its true position until it is learned and practised as a distinct mechanical art uncomplicated with medicine.

On the other hand, the proper treatment of dental disease requires a knowledge of medicine equal to the general practitioner, to which should be added such special knowledge as would make the Dental Surgeon an authority worthy to be taken into consultation with medical men in all diseases, either directly or remotely connected with the teeth, which would, of course, include sufficient knowledge to prescribe for all constitutional or local conditions that affect these organs. To this should be added such training as would make him a skilled manipulator in operations upon the teeth, or associate parts. To obtain such knowledge and acquire such skill, even to a reasonable degree, in the time now allotted by our Dental colleges, and at the

same time to become respectable manipulators in the various kinds of mechanical Dentistry, is simply impossible. And it will never be elevated to its proper position as a special department in medical practice until its teaching and practice is uncomplicated with mechanical Dentistry.

With this statement, the practical question that confronts us is what change should be made in Dental teaching to meet this exigency? Possibly this problem is not easily solved, but I will state what seem to me to be desirable. In the first place, I would require all Dental Surgeons to be medically educated; and I would have physicians so educated as to dental diseases that they would be as intelligent upon these matters as they are in regard to other diseases. To this end I would establish chairs upon diseases of the teeth in all medical colleges, and all entering students should matriculate as medical students, thus making a knowledge of the diseases of the teeth and the science of their treatment as essential to graduation as a knowledge in any other department of medicine—graduating upon the same footing. For the practical teaching of mechanical Dentistry, as well as the practical application of medical science in the treatment of dental diseases, I would have an infirmary. In this infirmary I would have a department for the teaching of mechanical or prosthetic Dentistry under the direction of one or more competent mechanical Dentists, who would give instructions in all that related to that practice.

The students in this department should be required to attend such lectures as would make them familiar with the anatomy of the parts about which they work, as well as such lectures upon chemistry and art as would be applicable in their practice, and they should receive certificates of qualification on becoming sufficiently skilled in their calling to engage in the practice of mechanical Dentistry only. In this infirmary there should be a department for didactic and clinical instruction for those proposing to become Dental Surgeons, which department, of course, should be under the direction of the most competent Dental Surgeons in the country—as clinical surgery is taught by the most experi-

enced teachers and practitioners of surgery—rather than by young and inexperienced Dentists, as is now too often the case in our Dental colleges. But in no case should they receive certificates of qualification to practise without a medical degree. For the present, or until the people had become educated to the idea that mechanical Dentistry could be more properly done by those who follow it as an exclusive business, it might be well to make it optional for those who propose to practise Dental Surgery to receive instruction in mechanical Dentistry; and to give them a certificate of qualification for exactly what they were competent to do.

If they were competent to put up work on gold or platina, let it be so stated; and if they were only competent to put up work on rubber and celluloid, make a statement in exact accordance with these facts. But in no way make the qualification to practise in mechanical Dentistry requisite to a certificate to practice in Dental and oral surgery.

In this way mechanical Dentistry would be elevated to a position of great usefulness and respectability. But it should not, nor could not, in any way be regarded as a department in medicine, or in any way related to its practice, any more than is the making of artificial limbs, or sculpture, or painting.

In this way, I should in a few years expect to see our practice permanently divided, and prosthetic Dentistry developed into a high mechanical and artistic calling, and the relation between Dental Surgery and the other specialties, as well as the general practice of medicine, grow into a more proper and intimate relation.

In this way only, Mr. President, would the natural relation between Dental Surgery and medicine and mechanical Dentistry and its kindred arts be developed and maintained; and it is to be hoped that the time is not far distant when the Regents of the University of Michigan will see fit to inaugurate this or some similar system of teaching. For we want no more eye doctors, tooth doctors, or bone setters, but physicians, to treat the diseases of God's temple—the human organism.—*The Dental Record*.

ACONITE.—A CAUTION.

By Mr. GEORGE BRUNTON, Leeds.

IN my paper on the "Conservation of Children's Teeth"* I mentioned the use of Fleming's aconite in obtunding pain, and should have added a caution. As some practitioners may not be aware of its terribly poisonous nature, it may be well for me here to state that *one-fiftieth* part of a grain of aconitia will kill a dog. It will, therefore, be necessary to use this medicament with the greatest possible care. Aconite in large doses causes tingling at the extremities, reduces respiration, and causes death by stopping the heart's action. Aconite should not be allowed to touch the lips, skin, or eyes, as it causes great irritation. The treatment for an overdose of aconite is an emetic promptly administered. Galls, tannin, sweet oil, cinchona, and stimulation are also recommended. My mode of using aconite is to apply it on a small lock of cotton wool to the previously dried cavity, and cut away the dentine in the direction of the nerve fibrils, *i.e.* towards the crown or cutting edge of the tooth. A drop of aconite on cotton wool is good for obtunding pain in an inflamed cavity after extraction.

POISONING BY BELLADONNA AND ACONITE,

ON April 27th I was called in great haste to see a man who was stated to have taken some poisonous lotion by mistake. On arriving I found that he was an out-patient at the infirmary, suffering from rheumatism, and had been prescribed a lotion containing compound liniment of belladonna and aconite liniment, together with a mixture. When I

* See page 543, last issue.—Ed.

first saw him, he was lying on the sofa in great agony ; he was quite sensible, but unable to speak. He pointed to his stomach and bowels, and also to his tongue. His face was very much flushed ; he was foaming at the mouth and nose ; his pupils were contracted. The pulse was very fast and irregular, and the respiration hurried. His hands were clenched and the legs almost paralysed. The skin was cold and clammy. There was great muscular twitching. He had vomited before my arrival, but was quite unable to swallow. He died in about half an hour, in convulsions ; he was sensible to the last. Judging from the size of the glass used and the remaining contents of the bottle, I should say about two tablespoonfuls of the lotion had been taken ; this would correspond to the dose of his mixture. The relatives objected to a post-mortem examination. The lotion was sent out from the infirmary in a blue bottle, and was labelled "Poison."—W. S. SIMPSON, M.R.C.S., L.R.C.P., Worthing.—*Brit. Med. Journ.*

THREATENED DEATH FROM CHLOROFORM.

By GILBERT BARLING, M.B., F.R.C.S.,

PATHOLOGIST TO THE GENERAL HOSPITAL, BIRMINGHAM.

As the question of anæsthetics is still being discussed, I think the following note of a case, which recently gave me some anxiety, may be of interest.

A man, aged sixty-six, was placed on the table for removal of his upper jaw. I administered chloroform, as is commonly done in such cases, by means of a nasal catheter. The patient took the anæsthetic well ; but, in a short time after the commencement of the operation, I noticed his respiration becoming shallow, and it eventually ceased ; the heart's action, which I was carefully watching, kept up its vigour and rapidity. Artificial respiration was commenced, and after the lapse of two or three minutes was desisted

from, to see if the patient made any attempts at natural respiration. He did not, and the artificial method was again resorted to, and again stopped, but without arousing any effort at respiration on the part of the patient. It was not until nearly ten minutes after respiration failed that he breathed by his own powers; and to this he was aroused by tickling his sides, as he was by this time become quite sensitive to external stimulation. The operation was then proceeded with, only a small quantity of the anæsthetic being administered, the respiration occasionally threatening to cease. I should mention that, at the time respiration failed, the patient was barely anæsthetic, as slight reflex movements of the eyelids could be obtained. The pupils were moderately contracted. Death occurred two days after the operation, apparently from exhaustion, when it was found that both lungs were very emphysematous, and the right was adherent. Slight fatty degeneration of the heart-muscle existed.

This case illustrates what is sometimes denied, viz. that death from chloroform may be caused by failure of respiration. This case reminds me of another in which the heart failed first.

A young man was being operated on for cleft palate. He had been on the table for nearly an hour, when I noticed his pulse flagging, and eventually it could not be felt at the wrist. Cessation of respiration then followed, but, on removing the gag and lowering the head, preparatory to artificial respiration, both pulse and respiration were re-established. This patient was not deeply under the influence of chloroform, as I considered it advisable to be cautious, owing to his depressed condition from vomiting and loss of blood, the latter being considerable. It impressed on my mind the advisability of always watching the pulse as well as the respiration when administering chloroform, as in this case I certainly obtained the earliest indication from the pulse that the patient's condition was one of danger. I mention this because I know that some teachers of repute state that attention to respiration only is necessary, and that the pulse may be neglected.—*Brit. Med. Journ.*

British Journal of Dental Science.

LONDON, JUNE 15, 1882.

ODONTOLOGICAL SOCIETY'S NEW RULE OF EXCLUSION.

It becomes our duty to remind all reputable practitioners who may wish to become members of the Odontological Society of Great Britain that under its new rule of exclusiveness the 31st of October next will be the last moment when any nominations can be made for membership, unless they possess the mystic charm of some diploma acceptable to the Council. We deeply regret to see this new rent torn in the gradually converging series of circumstances calculated to bring all respectable members of our profession into one homogeneous whole. We cannot help looking upon it as both a retrograde and unnecessary restriction, and deplore it, as below the general liberality of the age. Why this Society, which as a purely scientific body should be anxious to obtain scientific truth from whatever source it might be attainable, should consider any gentleman eligible for membership in October but not in November is a mystery beyond our comprehension. Its Council has *unlimited* power already to keep the Society as select as it thinks proper. No candidate for membership can be even nominated without its sanction, the law that only "after being *approved by the Council*" can a candidate be balloted for by the members giving a double security, for if a candidate is objectionable, the Society need not have even the unpleasantness of black-balling him, as his name never comes officially before them. Taking this in connection with the fact that the new rule can only apply to gentlemen *now* in practice—the Act of 1878 making it incumbent on all new-comers to possess the required credentials—we must confess

it has the outward appearance of either aiming at some special individual or individuals or of an attempt to force a sudden influx of members much to the immediate and permanent benefit of its finances. We must in nowise be understood to impute such unworthy motives, but nevertheless feel bound to point out that they are the ones most likely to strike the minds of those outside the Society's walls. We are not amongst the initiated of the Society's motives, and therefore cannot discern the wisdom of its even temporarily debarring itself of the power of electing for membership whom it pleases, just as it rejects whom it may not be disposed to associate with. We say "even temporarily," because the wisdom of a few years hence may choose to rescind such an apparently unnecessary law. Time works wonders in most things. It has taken the Society just twenty years to see that it was scarcely equitable that, as the Odontological Society of *Great Britain*, it should retain a law compelling *all* presidents to be elected from those members residing within the magic radius of ten miles. It is surely nothing short of the irony of fate that imposes on the first president under this more generous system—who by his unquestionable ability has shown how unmistakably narrow-minded and absurd was that old illiberal, but now happily abolished law—the duty of drawing the special attention of the members (and the profession generally) to this new rule of needless restriction on their freedom of action.

Manipulative Miscellany.

NEW ANTISEPTIC GAS INHALER.

MR. BARTH, Poland Street, Oxford Street, W., long so well-known in connection with nitrous oxide gas and its apparatus, has recently completed a new face-piece—designed by Dr. R. T. Freeman—constructed entirely of rubber. It differs

somewhat in shape from those most generally in use, being more that of a cone, the gas entering at the apex, having the expiratory valve on the upper and the supplemental bag at the under side in the usual manner. Its advantages appear to be that the wall of the cone being of comparatively elastic material, and having the usual air pad around its margin—all in one piece—makes its adaptability to the face very simple and perfect, that as it has no leather or other covering, and the usual delicate valves are so arranged that they can be readily withdrawn. The whole face-piece may be put into water, antiseptically treated, and thoroughly washed after use with each patient—a most desirable attainment if only for cleanliness, to say nothing of thus practically overcoming the possibility of conveying disease from one patient to another through the medium of contagious or infectious breath. The supplemental bag also has a wide mouth and can be turned inside out, if thought desirable, for cleansing. We understand he is preparing other improvements in connection with it.

DIAMOND POLISHING DISCS.

THE DENTAL MANUFACTURING COMPANY request us to state that these elastic polishing discs (see p. 560) were suggested by Dr. Comer, Torquay. They have now many other most useful forms on view.

PINK RUBBER.

MESSRS. W. & J. JAMIESON inform us that they have made a further improvement in their pink facing rubber by which it packs still softer than before, whilst it retains the same excellent colour.

IMPROVEMENT IN WHITE'S PEDAL LEVER CHAIR.

MR. RUTTERFORD has one of the above chairs with a new and *additional* movement, by which the back can be reclined

to any angle without altering the position of the seat or foot-rest. This new action is so contrived that it in nowise interferes with the old one, by which when the back is reclined the seat and foot-rest are raised proportionately. We consider this an improvement of considerable importance, and wish the head-rest would be made to hinge as nearly as possible in the same centre as patient's head moves on the neck; an alteration we feel sure that would be appreciated by most operators.

WHITE'S PORCELAIN STOPPERS.

HE has also a considerable stock of these inappropriately named mineral plugs, of great variety of sizes and shapes, designed for almost every possible position of cavity in a tooth. They are something like irregular shirt-studs in appearance, and are intended to be embedded in gutta-percha, amalgam or other plastic fillings, thus procuring a mineral surface—the colour of which can be matched to the tooth—for both mastication and appearance. Their delicacy and adaptability of form should be seen to be thoroughly appreciated, a simple description can give no adequate notion of their usefulness.

Literary Notices and Selections.

DENTAL HYGIENE.*

BY DR. W. P. RICHARDS, Elgin, Ills.

HYGIENE is that branch of medicine which has for its object the preservation of health by the prevention of disease.

* Read before the Illinois State Dental Society.

Dental hygiene, then, will have in view the preservation of the teeth by prevention of the causes which induce their destruction.

Medical hygiene has done more to prevent disease and alleviate the sufferings of humanity than all the drugs ever made have eradicated.

When the masses of the people become more thoroughly educated to a knowledge of hygiene, when generation after generation shall observe the laws of health, then may we look for still greater results in this department.

If our profession is to meet the increasing demands made upon it for the preservation of the natural teeth, I firmly believe it must be through hygiene, medical and dental. They cannot be disconnected.

The loss of the teeth is almost wholly caused by caries and the effects of salivary calculus or tartar.

It is not the object of this paper to enter into an extended consideration of the causes of caries, but it will be necessary to review the matter so far as it relates to the subject before us.

The causes of caries may be classed under two headings; those of a general or predisposing nature, and the local or directly exciting causes.

Among the predisposing causes, I consider transmitted imperfect tooth tissues to be the greatest, arising largely from defective constitutional development, and susceptible under favorable influences to improvement, as are most hereditary defects.

We inherit our real character of physical constitution, and this is modified and influenced by conditions and surroundings in early life.

As a rule, the teeth partake of the inherited imperfections and qualities of the whole system, and anything that injures the whole affects every part also.

If parents have organic ailments, if the principal organs of vitality are diseased, these defects may be transmitted.

If imperfect tooth germs are formed in the fœtus, the teeth will be of poor texture, and thus unable to resist destroying forces.

Much will depend upon the character of the food eaten by the mother during the periods of gestation and lactation, as well as the subsequent conditions and health of the child.

Functional disturbance of the processes of digestion, assimilation, respiration, &c., in early life, may cause malnutrition ; and thus produce teeth of poor structure, deficient in amount and quality of lime salts.

More especially is this true before the eruption of the teeth, when calcification of the earthy portions of the crowns is in progress.

The debilitating effects of the diseases incident to early childhood may act as predisposing causes of decay.

This is often shown upon the teeth where an arrest of the development of the enamel has occurred, caused by deficient nutrition.

Food of improper nature, or lacking in the phosphates for the upbuilding and growth of the system, as well as climatic influences, may act as predisposing causes.

Any untoward influence that creates an impaired constitution gives a predisposition to caries.

The chemical or acid theory of caries is now almost universally adopted by our profession as a directly exciting cause of decay.

The acidity may arise from systemic or local causes.

Prof. Wedl says, many forms of dyspepsia, scrofula, and diabetes may produce an acid condition of the mixed saliva.

In several of the worst forms of decay I have found the saliva of the parotid gland giving an acid reaction.

In its normal condition, the secretion of the salivary glands is slightly alkaline, and, if secreted in abundance, aids to neutralise the acid mucous secretions, or acids generated in the mouth by the decomposition of food and organic matter ; also acids taken directly into the mouth.

The secretion from the mucous glands of the mouth, as well as from the entire mucous membranes of the digestive tract, may become acid and act directly upon the teeth.

But I consider that acids formed in the mouth from the decomposition of food and organic matter in the mucus and saliva, to be the greatest direct cause of the loss of teeth.

The albuminous matter in the saliva, in many debilitated persons, is viscous or sticky, and readily adheres to the teeth upon rough surfaces and depressions, and aids in catching food and organic matter.

These organic matters, under the influence of heat and moisture, soon undergo fermentation, and we have acids formed of various kinds, some acting upon the enamel only, while others attack the dentine and cement.

Little is known of the phenomena of fermentation, but during its process compound bodies are separated into their simple elements by coming in contact with nitrogen, or bodies containing nitrogen.

Putrefaction takes place in bodies which contain nitrogen.

We have in the mouth the ptyalin, the effete epithelium of the mucous surfaces of the mouth, and the albuminous matter of the buccal glands, all substances which act as ferments upon organic matter taken as food which finds lodgment around the teeth.

From putrefaction of nitrogenised bodies, as animal food, casein and albumen, acids are formed.

If we accept the foregoing views, it is evident we have at least a partial basis on which to found a system of dental hygiene.

General causes should be met by systemic, and local causes by local treatment.

As to the direct therapeutic treatment for imperfect tooth tissues, we are without sufficient accurate knowledge upon which to base any treatment which will guarantee a given result.

Dental hospitals or orphan asylums, where large numbers of children are fed on the same food and have the same surroundings, would be a fruitful field for extended experiments in this direction.

In the absence of anything direct or specific upon this important part of our subject, I can only say that a close observance of the laws of life and health in early life, and a good supply of food, rich in the phosphates, cannot fail to be beneficial.

When a patient applies for treatment of the teeth, we

should first diagnose the case, to ascertain, if possible, the cause of the difficulty.

For this litmus paper will be one of our greatest aids, and it should be used in different parts of the mouth, to test the reaction of the various secretions.

If we can get hold of the cause of decay or disease, in each mouth we are called upon to treat, and point out the remedy, or lessen injurious influences which may be at work, we will have done our patient a more lasting good than would result from any Dental operation.

Often do we find dental work of the highest order amid surroundings that are but the essence of filth and uncleanness, and the person wonders why the teeth decay or the fillings drop out.

(To be continued.)

FOREIGN BODY IN THE ŒSOPHAGUS PASSED PER ANUM.

By DAVID DAVIES, F.R.C.S. Eng., &c.

WM. F—, aged twenty-six, married, a colliery clerk, came to my surgery on December 8th, at 5 p.m., in a violently agitated state, stating he had swallowed a plate with artificial teeth attached. He was suffering from acute dyspnœa and pain in the gullet, restlessly moving about, and feeling sure he was dying. On introducing a large pair of œsophageal forceps a foreign body could be felt about seven inches down the gullet. Failing to grasp the object with the forceps, though carefully and repeatedly tried, I gently pushed it into the stomach with a probang, to the immediate relief of the patient. He was recommended quiet, a constipating diet, &c. He called daily, and on December 13th brought with him the artificial plate, which he had passed per anum that morning without any discomfort. He stated that whilst playing with his child on the day of the accident, tossing it in the air and catching it again, he suddenly felt the plate, one hook of which had been broken off, and from which two false teeth had fallen, slip down his gullet, causing intense

pain and difficulty of breathing. He has since entirely recovered, and resumed work, none the worse from his strange accident.—*The Lancet*.

CHOKED OR DROWNED?

AN inquest was held at Portsmouth on May 31st on the body of Mr. John Forbes Calland, who had been residing at Southsea for eighteen months, and who was drowned from a bathing machine on Southsea beach on the previous day. The deceased was a magistrate for the County of Glamorganshire, and was seventy-two years of age. On Tuesday he bathed off Southsea beach, and was found shortly afterwards lying on his face in the water. On his being examined it was ascertained that his false teeth had been displaced and had blocked the windpipe, accelerating his death, which was caused by drowning. The jury returned a verdict of accidental death. It is very probable that the shock caused by diving or plunging in the cold water had induced a deep inspiration; that then the false teeth had become impacted in the opened glottis, thus preceding, and in fact causing, the drowning.—*Lancet*.

Reports of Societies.

ODONTOLOGICAL SOCIETY OF GREAT BRITAIN.

ORDINARY MONTHLY MEETING, HELD 5TH JUNE, 1882.

S. LEE RYMER, Esq., L.D.S., President, in the Chair.

THE LATE MR. DARWIN.

The SECRETARY read a letter which had been received from Mr. George Darwin thanking the Society for the vote of condolence passed at the last meeting.

PRESENTATIONS TO THE MUSEUM.

Mr. S. J. HUTCHINSON acknowledged the receipt of several additions to the museum, including the skulls of a leopard, of a sloth bear (*Ursus labiatus*), and of a tiger; in the latter, one of the canines had been broken by a bullet and alveolar abscess had resulted, but the injury had been repaired. These had been presented by Mr. O'Meara of Simla. Mr. T. Russell Watford, of Newcastle, had sent two curious specimens of salivary calculus.

SPECIMENS.

Mr. CHAS. TOMES showed a dog's skull which had been sent by Mr. E. M. Tod, of Brighton; the animal was aged, and its teeth much worn, but in the front of the mouth some new incisors were to be seen in process of eruption.

He also showed a lower wisdom tooth from a patient who had been sent to him by Mr. Wallis. All the wisdom teeth were buried in the gum, but this one had evidently set up irritation, as was evident from a growth of polypi over it. These were tied and the tooth removed by means of an elevator, but not without using a considerable amount of force. It was then found that the crown was carious, and that across both the roots there was a deep groove (amounting to more than a semicircle), which had evidently contained the inferior dental nerve. Paralysis of the parts supplied by this nerve followed the operation.

STEEL SPRINGS.

Mr. STEVENSON demonstrated his method of making steel springs which, for the exceptional cases in which the use of springs was necessary, he found much more satisfactory than the gold ones generally used.

Mr. HUNT said that since the Congress meeting last year, he had also used steel springs, and had found them most useful. A scientific neighbour of his had made himself springs of iridium wire, and they answered splendidly.

CELLULOID.

The PRESIDENT then called upon Mr. W. A. Hunt to read his paper on "Celluloid."

Mr. HUNT began by apologising for the "lowliness" of his subject. In his opinion Mechanical Dentistry did not receive at the hands of Dental societies as much attention as it deserved. In spite of increased knowledge and increased

skill, dental disease appeared to be on the increase, and the forceps were constantly being called on to remove useless organs. Practitioners were expected to do their best to supply the deficiencies thus caused, to enable patients to masticate their food, and to remove a long train of discomforts, or even serious diseases, which were liable to arise from this cause. He thought that the idea that Mechanical Dentistry was beneath notice was due to false pride. The study of an art which conferred such admitted benefits on our fellow-creatures was, he contended, not beneath the notice of educated men, or of a Society whose aim it was to advance in every way the knowledge of Dental Surgery.

No subject had during the last few years excited more interest, or caused more disappointment, than celluloid. A base, strong, life-like, durable, on which artificial teeth could be mounted so that each individual tooth could be placed in the position best suited for the special requirements of the case, had long been a desideratum. It would be admitted by all that celluloid was in appearance infinitely superior to any other base except continuous gum work. This latter was heavy, liable to break and chip if dropped, and then very difficult to repair. It required much time and skill in making, and the materials were costly, putting such a plate beyond the reach of many patients.

At the same time many serious difficulties were at first met with in the working of celluloid. These were well summed up in a paper by Dr. Eben Flagg, published in 1879, and entitled "Why Celluloid does not succeed." He said, "If we go on working celluloid in the manner which we have been taught it will be a failure, because there has been no apparatus that will fulfil the conditions required for the production of a proper plate. These conditions were as follows:

"1. No steam, oil, or other foreign substance must be allowed to come in contact with the material while it is plastic, or it will discolour.

"2. During the process of pressing, one portion of the blank must not be colder than another, or the plate will warp.

"3. The material must have its form changed at a temperature much higher than is now used, otherwise it will have a tendency to return to its original form. This heat must be obtained in an apparatus that is air-tight, for if the super-heated material can obtain oxygen, either in the form of air or vapour, it will surely burn."

Dr. Flagg further says:

"Take a large blank and fill it with plaster, thus making a model for it to rest upon; the blank will of course fit the

model, and in six or twelve months' time it will fit as well. The Celluloid Company have not boiled that blank in oil or glycerine, they have not subjected it to a current of super-heated steam, nor have they cooked it in an oven that would heat one part of it more than another. We may take this blank and put it to soak in the contents of our saliva-pump, and there it may remain for six months at a temperature of 100° Fahr. with no change either of colour or form. We will now take a similar blank and mould it on a plaster cast in a steam machine. The first effect we note is that our steam-moulded plate will smell strongly of camphor and cut under the instrument in somewhat the manner of hard cheese. In about three days the smell of camphor will have gone off, but whilst we congratulate ourselves upon this we notice another change upon which we cannot congratulate ourselves, and that is that the plate will not fit the cast at all. If we now take our steam moulded piece of celluloid and put it to soak in the contents of the saliva-pump, we shall find that in one week it will begin to discolour, and in a month will present an appearance as disagreeable as bow-spring rubber."

Mr. Hunt went on to say that he was pleased to bring before the notice of the Society a machine which fulfilled all the conditions asked for by Dr. Flagg, conditions which had been shown to be absolutely necessary for the successful manipulation of celluloid. In Dr. Campbell's apparatus you would obtain in a dry chamber an equal heat all round the flask, you could obtain any amount of heat you required, and could maintain it equably for any length of time. You could through a glass door see all that went on inside the chamber, and could take out or put in your flask instantly. His own machine was fitted with one of Gartrell's pressure gauges, which he considered much more reliable than a thermometer; it showed the amount of steam pressure as well as the inside temperature of the boiler, and regulated automatically the supply of gas. His plan was to get an accurate plaster model of the mouth; from this he made a tin model, on which the celluloid was moulded, all surfaces which would be in contact with the plaster investment being protected with tinfoil. Prepared in this way the surface of the finished plate was much harder and smoother than when manipulated in the ordinary manner.

After considerable experience with Dr. Campbell's machine, he had been convinced that by its intelligent use a whole catalogue of difficulties, which had obscured the path hitherto, would be dissipated. Practitioners living in London obtained great advantages in obtaining early information of all improvements, and to many of those present the

subject of his paper might not be new ; but there were so many like himself, whose opportunities of learning were limited, that they, the favoured few, he hoped would forgive him if he had wearied them in his endeavours to benefit the many.

During the reading of the paper Dr. Campbell placed an entire upper set, which he had previously prepared, in the apparatus, together with a celluloid blank. In five minutes the flask was screwed down, and in ten minutes more the piece was taken out, removed from the flask, and handed round for inspection.

Mr. FELIX WEISS remarked that Mr. Hunt had said a good deal about the apparatus, but very little about the properties of the material itself. He (Mr. Weiss) thought that this was the most important part of the subject. The apparatus was probably an improvement upon its predecessors, though the plan of moulding celluloid by dry heat was not new, but he doubted whether any apparatus would overcome what he believed to be faults inherent in the material, such as its tendency to shrinkage, to double and flake off, and the difficulties of adding to or repairing it. Then there was its tendency to change colour. It also wore away more easily than rubber ; it would become frayed even by the action of the tongue. Rubber, as they all knew, would last twenty to twenty-five years without change, but he had not yet met a celluloid plate which had been tested for half that time. On the whole he could not see what was to be gained by substituting celluloid for rubber.

Mr. VANDERPANT, of Kingston, said that during the last four years he had occasionally used one of the Dental Manufacturing Company's machines, and with success in some cases, but he felt bound to admit that he had had almost as many failures.

Dr. WALKER said he had obtained one of Dr. Campbell's machines in August last, and had used it constantly since with the most satisfactory results. Of course six months was too short a time to enable him to judge of the *durability* of the plates. There was one caution to be observed : celluloid plates must never be placed over old roots ; these must always be extracted. His previous experience of the material had not been satisfactory, but he believed that if Mr. Weiss would try the apparatus now before him, he would find that the difficulties he had spoken of had been successfully overcome.

Mr. WILLIAMS gave an amusing account of his experiences with celluloid. At first he had many failures, but after a time was more successful. He found it did best in edentu-

lous cases, but was liable to become much worn by attrition. Last year he replaced thirty celluloid plates of his own manufacture by vulcanite, and should have been glad to have done the same for other patients if he could have ascertained their whereabouts.

Mr. STEELE, of Croydon, said his previous experience of celluloid was the same as Mr. Williams', but since he had used Dr. Campbell's machine he had seen reason to change his mind. All the cases prepared with it had been successful, and he found that the celluloid had increased density and a smoother surface.

Mr. F. CANTON spoke to the same effect.

Mr. CHAS. TOMES remarked that though the opinions expressed had been for the most part favorable, they were based too much on general impression and on the experience afforded by a very short trial. They were useful as far as they went, but he should like to hear some more exact data as to the changes which took place in the composition of the material, the loss of camphor, its specific gravity before and after heating, its breaking strain, &c. If he had these, and statistics derived from, say fifty pieces, which had been worn for a considerable time, he should feel able to form an opinion, but at present he was not altogether convinced.

Mr. HUNT, in replying, said he had not troubled himself about the chemical constitution of celluloid. He could only speak of the practical results obtained with it. Mr. Tomes' criticisms were true enough, but it would take six years instead of six months to obtain them. But he hoped that what had been stated by himself and other speakers that evening would be sufficient to induce others to experiment for themselves.

The meeting was then adjourned.

There was a remarkably full attendance for a June meeting. So, presumably, the subject of "Celluloid" was an attractive one.

The President availed himself of the opportunity to impress on those present that October 31st next would be the last opportunity for all practitioners *without diplomas* to be nominated for membership under the new rule, adding "that after the publicity which had been given to this fact, it would be individual's own fault if any eligible were left out."

A paper by Dr. Alfred Carpenter is announced for the November meeting, and one by Mr. Charters White for December.

Dental News.

NATIONAL DENTAL HOSPITAL.

THE Annual Distribution of Prizes to the successful students of this Institution for the past year took place at the Beethoven Rooms, Harley Street, on the evening of May 31st. The Rt. Hon. Lord Viscount Enfield presided. The Dean's report was as follows:

MY LORD, LADIES, AND GENTLEMEN,—Four years ago the only Dental schools where the whole of the special education of the Dental curriculum was actually carried on were the two schools of this metropolis. Now there are seven institutions that have a complete staff of lecturers and teachers. Notwithstanding this rapid increase in the number of teaching centres, which speaks well for the educational advancement of the Dental profession, the National Dental College has maintained a satisfactory position. During the past year there have been six full and thirteen partial entries; while three students have obtained the Dental qualification of the Royal College of Surgeons of England, three that of Edinburgh, and four that of Ireland.

Mr. Mountford, who last year won the Prize for Metallurgy, has further distinguished himself, and has to receive the Certificate of Honour for Dental Anatomy and Physiology, the Prize Medal for Operative Dental Surgery, and the "Rymer Gold Medal" for General Proficiency. Mr. Pidgeon, who has already carried off three Prizes and four Certificates of Honour, has been awarded the Prize Medal in Dental Mechanics, and also in Dental Surgery. Mr. Hughes has to receive the Prize Medal for Dental Anatomy and Physiology, and the Certificate of Honour for Dental Mechanics, for Dental Surgery, for Operative Dental Surgery, and for the Elements of Histology. Mr. Penrose has to be presented with the Prize Medal for Metallurgy, and the Prize Medal for Dental Mechanics of Session 1882; the Certificate of Honour for each of those subjects to be received by Mr. Chas. Rose. Mr. Carter has been successful in winning the Prize for the best piece of Mechanical Work.

The changes that have taken place in the Staff of Lecturers are the resignation of Mr. Oakley Coles and the retirement of Mr. G. J. Williams. Losses such as these are keenly felt, because each of them has worked zealously and

successfully for the School during the past five years, while their labours have been appreciated by their colleagues and highly valued by the students. Mr. Willoughby G. Weiss, has been appointed to the Lectureship on Dental Surgery, Mr. Harry Rose to the Chair of Dental Mechanics, and Mr. W. R. Humby has been elected to the office of Demonstrator of Dental Mechanics.

At the same time the requirements of the examiners are fully and successfully met—for not one student has failed. There is apparent the slowly advancing necessity of extending the sphere of Dental education and examination. And whatever direction this may take, the staff of this Institution will ever be ready to co-operate, to the educational, intellectual, and professional advancement of the specialty.

On the 30th of April, 1862, the Annual Distribution of Prizes to the Students of the Metropolitan School of Dental Science was presided over by the Rt. Hon. Lord Viscount Enfield. After twenty years his lordship again occupies the same position. It is a source of gratification that the Dental profession, and the National Dental Hospital and College in particular, can include among their friends and patrons one who occupies so honorable and distinguished a position, and who has for so many years devoted so much valuable time to the Hospital as a charity, as the right honorable nobleman who graces the proceedings of this evening.

The Prizes having been presented by the Chairman to the successful Students,

The CHAIRMAN said:—Ladies and gentlemen, it appears that it is expected of me to say a few words—and they shall be a very few words—before we proceed to the other part of this evening's programme, which will include, I hope, some very pleasant vocal and instrumental music. But I feel I should be wanting in respect to the gentlemen who have been so long connected with the National Dental College if I did not in my own name, and, I hope I may say, in the name of the public who have benefited so much by their kindness, by their skill and attention, return them our grateful thanks for the good they have conferred for many years past on suffering humanity. The Dean, in introducing the gentlemen who have received prizes this evening at my hands, was good enough to say that I have been for twenty-one years connected as President with this very valuable and useful Institution. I hope you will believe me when I say that I appreciate the compliment paid me very sincerely, and I am very glad to hear that although a few years have passed since that compliment was paid me, I feel proud of being President of so valuable and

excellent an Institution. I have endeavoured every year to attend the annual meeting, and have listened to the Report of the Finances and the general mode in which the hospital has been conducted, and I am bound to say, although a little addition to the funds by way of donations would be palatable, that this Institution has been conducted on sound and economical principles. But in addition to this I thought, as my name was connected with this Institution, that I would look in and see the gentlemen at work; and on one occasion last year I spent nearly an hour at the hospital, and I am bound to say that I was struck with the kindness and attention and the aid which was afforded to the number of persons in the hospital that morning. I have heard remarks by two or three persons who have been great sufferers, and who have received benefits from this Institution. The words of one of them to me were, "If I had been the first lady in the land I could not have received greater attention than I have from the surgical and medical gentlemen in the hospital." I think it is only right that I should mention this to the assembly this evening, and to return to the gentlemen my thanks for the kindness, skill, and attention that many have received at their hands. When I accepted the invitation to preside this evening, I made a stipulation that I should not enter into the professional part of these proceedings, because perhaps it might be thought impertinent on my part to speak on these subjects. I will content myself by expressing my grateful thanks for the compliment paid me many years ago in your allowing me to be connected with such an excellent Institution, and by assuring the gentlemen on the platform that they and others who have retired from the hospital have done incalculable good in alleviating the evils from which humanity suffers. I hope the hospital will continue to do as much good in the future as it has done in the past; and I thank them in my own name and in the name of the public for the good they have done for so many of their suffering fellow-subjects. With these few words I beg to thank you for the kind reception you have given me.

Mr. OAKLEY COLES.—My lord, ladies, and gentlemen, when I tell you that the programme of this evening's proceedings was drawn up by our excellent friend the Dean, you will understand why what I propose doing now was not inserted in its proper place. I have the extreme pleasure in rising now to propose that the best thanks of the staff and those present, including those ladies who have charmed us with their presence this evening, be accorded to Mr. Gaddes, for his services to this College. Unless you are acquainted

with the work of this Institution it is impossible to form an idea of how much prosperity and success in all the details of efficient working depend on the labours of the Dean. The Dean is an officer to whom every one appeals for help and information, and in Mr. Gaddes we have a most excellent Dean. I have been compelled to resign my duties from ailing strength, but before relinquishing my official position in connection with the Hospital and College, I want to record my deep appreciation of the services rendered by Mr. Gaddes and the obligations we are under to him for the capability and the great devotion he has shown to the School while he has held the office of Dean.

Mr. WILLIAMS.—I rise with very great pleasure to second the motion. During the year I have been with Mr. Gaddes as lecturer at the hospital I have found him to be all that Mr. Coles has said. I found him to be the right man in the right place; and I am quite sure the success of the College is due very much to Mr. Gaddes' exertions. I hope he will be spared for many years to carry on the work.

The resolution was carried.

Mr. GADDES.—I feel very deeply the high compliment paid me by Mr. Coles and Mr. Williams, and you, ladies and gentlemen, in according to me the hearty vote of thanks which you have done. It is a general practice to raise a monument to people who are dead. I hope not yet to give up this mortal coil, but for some years, at all events, to do my best for the Institution. I sincerely thank you for the compliment you have so heartily expressed.

Mr. RYMER.—I beg to propose a vote of thanks to Lord Enfield for presiding. You have heard, many of you, that his lordship has taken a warm interest in the National Dental Hospital for a period of over twenty years. I have myself had the honour of being associated with Lord Enfield during that period. His lordship has himself stated that he has attended from time to time on public occasions, and been present when the operations have been performed; but I know he has been in the hospital when apparently nothing particular has been going on, to look over the books. That is what we like. It is particularly gratifying to me, as Treasurer of the hospital, to know that Lord Enfield has taken that interest in the Institution, and looked into affairs which are not, in all cases, so carefully examined as they should be. We are particularly indebted to our Chairman for attending here this evening, when he has such a weight of anxiety upon him. We know Lord Enfield is connected with Her Majesty's Government, holding a high office, but nevertheless he does not hesitate to come amongst us to

preside with the grace and ability that he has done over this meeting.

The CHAIRMAN.—I am very much obliged to you, Mr. Gaddes and to Mr. Rymer for the kind compliment you have paid me. I will not intrude longer on your time by making another speech. I thank you all very gratefully and kindly for the compliment you have paid.

An excellent programme of vocal and instrumental music was performed, much to the enjoyment of the audience.

THE DENTAL HOSPITAL OF IRELAND.

THE first public annual meeting of the friends and supporters of this institution was held on the 25th ult., at the hospital, 29, York Street.

There was a large attendance, principally of ladies.

Alderman Sir J. W. MACKEY was called to the chair.

Amongst those present were:—Mr. F. Kellet Barton, F.R.C.S.I. (Vice-President Royal College of Surgeons); Dr. J. W. Moore (Vice-President King and Queen's College of Physicians); the Right Hon. Lord Justice Fitzgibbon; Alderman Campbell, J.P.; Mr. R. H. Moore, F.R.C.S.I.; Mr. Daniel Corbett, M.R.C.S.E., Dental Surgeon-in-Ordinary to the Lord Lieutenant; Mr. J. A. Baker, F.R.C.S.I.; Mr. W. Booth Pearsall, F.R.C.S.I.; Mr. R. Theodore Stack, M.D., F.R.C.S.I., D.M.D. (Harvard); Mr. A. W. W. Baker, M.B., Ch.M.; the Rev. Samuel Haughton, D.C.L.; Mr. William O'Shea, Registrar, &c.

The CHAIRMAN having thanked the meeting for having asked him to preside, and spoken of his gratification at the large attendance, called upon Mr. W. Booth Pearsall, F.R.C.S.I., to read the opening statement.

Mr. PEARSALL said—I have been placed in the responsible position of addressing you by my colleagues, the members of the surgical staff of this hospital, and I deeply feel the gravity of my position and the arduous nature of the duty that has been confided to my care. It falls to my lot to plead as earnestly and persuasively as I can on behalf of a new charity that has been added to the long list of benevo-

lent and humane institutions for which my native city has long been renowned. The Dental Hospital of Ireland, in which we are now assembled, was opened for the reception of patients in October, 1879, and the creation of this addition to the charities of Dublin is due to the energy and enthusiasm of Dr. Theodore Stack, our honorary secretary. I have been called upon, in addressing you, to endeavour to enlist your sympathies and financial goodwill on behalf of this institution, and I think there are few present here who will not cordially agree with Dr. Stack that there was an urgent need for its establishment. In creating this charity the Dental staff (for, indeed, it is entirely owing to their unselfish efforts that the carrying on of the work aimed at is possible at all) have been actuated by the purest and most benevolent motives, and the following objects have been kept prominently before them in order to secure the most practical and efficient means of carrying out their ideas:—1st. To afford immediate aid to poor patients suffering from toothache, a class of cases neglected at our general hospitals, or treated in such an unskilful way as practically to deter any unfortunate sufferer from seeking the aid usually to be obtained at these institutions. 2nd. By carrying out what may be broadly termed conservative Dentistry, and under favorable conditions endeavour to retain for use and health teeth too often removed from the poor by careless operators. Under this head come the various methods of filling teeth, the treatment of irregular teeth, a fruitful cause of disease, dental neuralgia, with its thousand terrors, and many other diseases, the names of which I am afraid would convey but little information to my lay hearers. These objects have a distinct and definite purpose, and do not encroach upon or interfere with the work of any of our hospitals. I think I hear some opponent of the system of promoting special hospitals ask why cannot this work be carried on in conjunction with our large surgical hospitals as a daily dispensary or sub-department? In reply to this keen critic I can say this plan has been tried and found a failure, though at least three of our Dental staff have occupied the position of Dental Surgeons to some of our large hospitals for several years. We have opened this hospital and have provided the best instruments and appliances to carry out a long-needed reform in our branch of the surgical profession. I hope it will not be considered either an affectation or an impertinence to consider our work an important branch of surgery, although, alas! the medical profession has for years neglected Dentistry and permitted a vigorous specialty to grow up in its midst uncontrolled and unaided by any of the better influences to

be gained from a more systematic study of and proficiency in the principles of surgery proper. We intend, if aided by your kind influence and assistance, and as the resources of the hospital develop, to open a school for the training of pupils who may wish to practise Dentistry, of young medical practitioners about to join the army and navy medical services, or to practise in country districts. When we consider our aims and objects a large field of work opens to us. Few attentive observers will deny the potent fact of the rapid and widespreading nature of Dental diseases in our present time. I may just mention in passing that one of the largest factors towards the spread of Dental disease is, like that of many other diseases, ignorance; and we all of us endeavour to combat this darkness of ignorance by educating our poor patients into a better appreciation of the value of the teeth as health- and life-giving organs. To carry out these aims we require money, that source of power for good or evil, and you will be told by some of the other speakers what a small pittance we receive as compared with the amount of work that I think our small staff of four operating surgeons may well be proud of, for in the short time we have been working over 9000 patients have been attended to. Our work steadily grows, and we constantly receive the most kindly expressions and tokens of gratitude from our poor patients, many of them, like the widow, casting their mite into our treasury. At the general hospitals, as I said before, dental cases are not properly looked after, and as far as I am aware, no inquiry is ever made by the medical staff or the committees of the general hospitals as to the fitness of young operators for such a responsible position, or as to their special knowledge of the anatomy or surgery of the parts operated upon, or as to the quality of the instruments they employ. I wish my hearers to impress upon their friends that we do not think our work ought to be broken in upon by emergency cases, but that poor patients should be sent to an institution which is open each morning under the charge of a competent operator for the special treatment and consideration of such cases. As you are aware we do not require to maintain beds in this hospital, and so have no claim to participate in the benefits of the Hospital Sunday Fund, but although it is not necessary to accommodate intern patients in grave and serious cases of disease, we have the opportunity of securing the ever-ready help of any of our large hospitals, and several cases of great interest have been already successfully treated in this way. It is pleasing to see how largely we are indebted to members of the medical profession for the means of carrying out our work, and we should much wish that

others would out of their abundance help us likewise, as a very small increase to our annual income would largely augment our opportunities of doing good. The address concluded with a touching reference to the great loss sustained by the death of Dr. Reuben J. Harvey, the pathologist to the hospital.

Dr. A. W. BAKER then read the report of the committee, which showed that the number of cases treated during the past year has been largely in excess of that included in the report for 1880. It will be seen that by referring to that report that the period included in it was fifteen months; the number of operations performed in those fifteen months was 3925, the number performed during the year 1881 was 4500. The work done at the hospital embraces the treatment of all diseases and irregularities of the teeth. It has, however, been found impossible and indeed inexpedient, to do fillings or to engage in the longer operations for all patients indiscriminately. Impossible, on account of the number of patients to whom these operations would be serviceable, and inexpedient, because it has been found that some patients who are able to pay, and for whom the services of this charitable institution were never intended, have no scruple in trying to take advantage of the benefits designed for the poor alone. The rules of the hospital, therefore, in reference to the admission of patients are as follows:—1. That no patient who is in pain shall be refused admittance to the hospital. 2. That the operations of filling and regulating teeth, and other Dental operations of a protracted nature, shall only be done for patients recommended by governors. In the governors then—that is, in the subscribers of one pound or more annually, and the donors of ten pounds in one sum—is vested the sole power of recommending suitable cases to the hospital. A reference to the rules of the hospital shows that each annual subscriber of one pound has the privilege of having four special operations performed, and also of recommending an unlimited number of patients for ordinary operations. For each case that requires ordinary treatment, unless in the case of the very poor, or of those out of employment, or of those with governors' recommendations, there is charged the small fee of sixpence. While this payment gives a sense of independence to the patient it contributes very materially to the funds of the hospital. The amount realised from this source during the past twelve months was sufficient to pay more than a third of the rent of the hospital, and was treble that subscribed during the previous fifteen months, an additional fact showing the increased popularity of the

institution. The committee have made arrangements with the authorities of Sir Patrick Dun's Hospital for the admission of any patients who may suffer from bleeding after extraction. With the very limited income at the disposal of the committee it would be quite impossible to pay a sufficient salary to a competent resident surgeon; nor have they, with the facilities afforded by Sir Patrick Dun's Hospital, any need for making such an appointment. For other purposes, however, funds are urgently needed. Additional dental chairs and other surgical appliances are much required to develop to the full the advantages of the hospital. At the audit of accounts ending December, 1880, there was a balance against the hospital of £36 7s. At the audit for the year ending December, 1881, the balance against the hospital was £30 8s. 1d. Thus, during the past year the expenditure was slightly less than the income. The committee, however, are much hampered by the want of funds, and urgently appeal to the public to place the financial position of the hospital on a secure basis.

Mr. J. KELLETT BARTON, F.R.C.S.I., moved the first resolution, to the effect that the report be adopted. He thought the establishment of this hospital was a step in the right direction, and that it had sprung up by natural force. Having spoken of the way in which the study of Dental Surgery had at first been ignored in general hospitals, and to the subsequent appointment of Dental Surgeons to deal with such special cases, which he regarded as a stage in the process of development, he said that the establishment of the hospital now under notice came at the right time in the progress of Dental science, and in it cases of the kind could be treated much more thoroughly and successfully than they could in a general hospital. It was quite impossible to give the requisite attention to Dental cases in general hospitals owing to the great pressure upon the time of the surgeons by accidents and ailments of a serious character. Therefore, he thought this hospital was a development of the greatest possible advantage to the community. Although there was much to depress them in the country, he thought their hospital system in Dublin would compare favorably with any other city in Europe, and was doing a vast amount of good among the poor. He heartily commended the resolution to the meeting. (Applause.)

The Rev. SAMUEL HAUGHTON seconded the resolution. Every one in the room had a right to have thirty-two good reasons for supporting the resolution—(laughter)—for they all had, or ought to have, the remains of thirty-two good teeth in their heads. (Renewed laughter.) Many of them

in their transit through life had lost some of their grinders, incisors, or canines, but he thought they were all agreed that of all the bones of their body that they were acquainted with they were the most troublesome. A tribe of South American monkeys had thirty-six teeth in their heads, and they were generally considered by naturalists to be superior to man. (Laughter.) At least he thought they were superior to man—(renewed laughter)—but in one respect man had the advantage—man had only thirty-two instead of thirty-six teeth to get pulled out, stuffed, or otherwise arranged. (Laughter.) He was sure that the University of Dublin and College of Surgeons did not include Dentistry in their curriculum for their students, they would do so as soon as this hospital became better known, and that the high-class teaching which it afforded was more apparent, and that their students would eagerly seek a better class of instruction in the Dental art. In the army and navy medical services instruction of that kind was essential; and in the Colonies it was of the utmost value. Many medical men going to the Colonies would ensure a large addition to their incomes if they were able to act as skilled Dentists. In the island of Ceylon the Dentist came round about once every three years. (Laughter.) In the meanwhile sufferers had to hold their jaws, take chloroform and other things, and then had to pay £5 or £7 for the pulling out of a tooth. He could not but believe that the subscribers would double their subscriptions for the next four or five years so as to procure those Dental appliances for the hospital that were required when they saw the good that was being done. He warned them against asking the Corporation of Dublin for a grant, because if they did the first question that would be asked would be—"Have you observation wards?" (A laugh.) Such wards would require a staff of philosophers with their microscopes continually turned on, and that would squander all the funds of the hospital. He advised them to keep clear of the sanitarians, and to treat the poor people and pull out their teeth as well as they could. (Hear, hear.)

The resolution was put and carried.

Mr. DANIEL CORBETT, sen., proposed the next resolution to the effect "That the Dental Hospital of Ireland was worthy of the confidence and support of the public." He spoke of the advances made in Dental Surgery, and of the number of teeth that were now saved which in former times were lost to the patients. Such an institution as this hospital would be able to afford much assistance to governesses, and also to domestic servants, and also to supply such people with artificial teeth at an extremely moderate

rate, and thus enable such people to discharge their useful duties to the public for more extended periods than otherwise would be the case.

The Right Hon. LORD JUSTICE FITZGIBBON seconded the motion. He regarded this as a most useful institution which would be able to aid their poorer brethren, and at the same time afford instruction to the younger members of the medical profession in Dental Surgery. Though an opponent of any undue multiplication of hospitals or staffs, owing to the expense necessarily entailed by such a process, he saw nothing inconsistent with his views in that regard in supporting this hospital on the ground of the education it would afford in the special class of surgical cases that would be treated in it; for Dental Surgery was in almost all respects largely a separate profession, which required separate appliances and a distinct education. He hoped they would be able to induce the authorities who presided over medical education to encourage the use of such an institution as this, where special education could be afforded, and if that were the case they would soon get the machinery and appliances for treatment that were necessary. (Hear, hear.) He would be sorry to see the intention not to make this hospital a clinical hospital changed, because any patient that required indoor treatment could obtain it much better in a general hospital where all the requirements for that treatment were already in existence. The true capital of this institution was the skill of the medical gentlemen who had created it. (Applause.) But when the public bore in mind that all they were asked to do was to contribute small sums of money which would be applied at sixpence a piece—for that was the cost per head, according to the report, of the operations—there ought not to be much difficulty in guaranteeing, when those small exertions on their part had been the means of providing so much for the relief of the poorer inhabitants of the city, a continuance of their aid, and, indeed, an increased support of so useful an institution. The whole expenditure of the past year had been some £160, and a sum of £30 or £40 more would materially aid in the further development of its usefulness. The institution had been established on a system by which the independence of the poor was secured, and it was one that in every way deserved their support. (Applause.)

The resolution was adopted.

Alderman CAMPBELL moved a vote of thanks to the surgical staff of the hospital for the valuable gratuitous service they had rendered to the poor patients under their care. (Applause.)

Mr. A. SHACKLETON, T.C., seconded the motion, and strongly urged additional financial aid to the hospital.

The resolution was passed, and a cordial vote of thanks to the Chairman brought the proceedings to a close.

A number of subscriptions were handed in at the close of the meeting.

FIRST TRIAL UNDER THE DENTISTS ACT.

At the Marylebone Police Court on the 31st ult., Charles Smith, of 94, Praed Street, was summoned by the Medical Alliance Association for falsely taking a name, title, or description implying that he was registered under the Dentists Act, 1878, and qualified to practise Dentistry under the Act.

Mr. C. J. Pridham appeared in support of the summonses.

Defendant did not appear, and it was stated by Mr. Dennis, a solicitor, that there was no Dentist of the name of Charles Smith at 94, Praed Street, but a Mr. Mallan, who was registered under the Act, carried on business there in that name.

Mr. Pridham said the case was a very important one, and was the first under the Act, which was to prevent persons practising as Dentists who were not registered. At 94, Praed Street, there was the name "Mr. C. Smith, Dentist," on the door and elsewhere in front of the house. The Register did not contain the defendant's name as a Dentist, and he was therefore liable to a penalty of £20.

Mr. Dennis stated that Mr. Mallan, who carried on business there, was registered.

Mr. Pridham denied that he was registered at that address, but he was at the address 173, Praed Street. His friend Mr. Dennis had come forward and stated that Mallan was identical with Smith, and that the latter was a myth.

Mr. Lushington said it appeared that Mr. Mallan, who was a practitioner in Praed Street, and properly registered, was carrying on business elsewhere in the same street under a false name. He should like the attention of the Council of the Association directed to the question whether this was not disgraceful conduct, and whether Mr. Mallan's name ought not to be removed from the Register.

He adjourned the summons for four weeks.

APPOINTMENT.

MATTHEWS, A. M., L.D.S.E., has been appointed Hon. Dental Surgeon to the Bradford Infirmary.

MARRIAGE.

ON the 11th ult., at St. John's, Glenthorne Road, the Grove, Hammersmith, Herbert Athelstan, youngest son of S. Barrow, Esq., of Wandsworth, to Mary Theodora, eldest surviving daughter of Charles James Fox, M.R.C.S., L.D.S., and granddaughter of the late Dr. Fox, of Finsbury Square.

Correspondence.

[We do not hold ourselves responsible for the opinions expressed by our Correspondents.]

A NEW METHOD OF TAKING DUPLICATE MODELS.

To the Editor of the 'British Journal of Dental Science.'

SIR,—From the description given in the issue of June 1st this is apparently the same process which has been in use amongst plaster modellers and pattern makers for many years.

The clay used is either ordinary clay softened and made plastic with water, in which case it requires to be kept in a close box when not in use, to prevent drying, or it is mixed with glycerine and water; the latter mixture does not dry or harden by exposure to air, and is frequently used by sculptors for modelling purposes. The elastic mould until the last few years has been made of a mixture of glue and treacle, the common printers' roller composition, but containing less water than printers' rollers require.

What is now used is gelatine, softened for three or four hours in water; after soaking the excess of water is removed by gentle pressure between cloths, the gelatine then being carefully melted by heat and about an equal weight of

glycerine added. This, with more glycerine and water, forms the well-known composition used in the chromograph and hektograph copying processes, and forms also the basis of the best printers' rollers, the essential difference being that for inking and printing a larger proportion of glycerine is necessary, this being the real ink solvent, the gelatine and water acting only as a mechanical sponge or cloth.

For elastic moulds a much smaller proportion of glycerine is necessary, sufficient only to prevent surface drying and consequent irregular shrinkage. There is no doubt that this process is a slow one and requires some experience to prevent the production of distorted models, owing to the permanent elasticity of the mould. Its principal use is in the production of duplicates which it is practically impossible to obtain by any other means, and for the production of spiral, curved, or distorted patterns from flat ones, many intricate geometric designs being produced in this way very cheaply; whereas a curved original pattern might be so costly as to be unattainable for the required purpose. It must be remembered that the introduction of elastic moulds for models and patterns, which are worse than useless if not exact, introduces an element of uncertainty which requires great care to steer clear of always; the harder the mould is made the less this risk becomes. If the mixture is made with the best amber gelatine it is sufficiently clear for the model to be seen inside, and where undercuts exist it is better to cut through the mould to the model with a thin knife, the parting being much easier to make. The cut will spring open to almost any extent and return perfectly close when the strain is removed. To ensure parting easily the model should be first varnished with shellac in spirit, and afterwards thoroughly and carefully oiled with a brush. Unless the oiling is perfectly done the mould is certain to adhere firmly and is liable to be torn in removing. Yours, &c.,

THOS. FLETCHER.

Museum Street, Warrington.

DUPLICATE MODELS.

To the Editor of the 'British Journal of Dental Science.'

SIR,—I am tempted to give a little more information concerning the process noticed on page 561 of your Journal, as I have practised a modification of it for two or three years past. I became acquainted with the fact that the makers of plaster images and figures use gelatine as a mould for small work, and I therefore tried it for my models. It is as well to have the model previously well dipped in stearine. A model

should always be left in stearine for some little time, not merely dipped for a few seconds. The stearine itself should not be melted in an iron pan on the naked fire, but in an earthen vessel placed in boiling water. (Models carefully stearined are much more satisfactory to work from.) These are of course well known facts, but I have seen workmen by whom they are not sufficiently appreciated, and to such this parenthesis will not be out of place. A very little oil carefully applied with a rather stiff brush will now be found sufficient.

To make the composition, procure say, a pound of fine gelatine in sheets; pour on this sufficient water to cover it, and when it is all perfectly soft, place in a towel or cloth, and squeeze any superfluous moisture from it. Put it in any convenient vessel (a jug answers very well), and add about two pounds of glycerine. I say "about," as the quantity varies with the time of year, more in winter less in summer; if too hard more glycerine, if too soft more gelatine added, as previously directed. The mixture can be poured on the model in any convenient vessel, but the most convenient is one made of zinc, shaped more or less to the form of the model, larger of course at the top than the bottom, in order to facilitate the withdrawal of the mould and model. The vessel can be made with a central depression at the bottom approximating more closely to the size of the model, which is placed base downwards in this vessel, and the melted composition poured on. The whole may now be placed in cold water to harden and set; when this has taken place pass a thin knife between the mould and the containing vessel, and if the latter has been slightly greased the mould can be easily withdrawn. Now with a sharp knife cut away the gelatine at the base of the model till that part of the latter is reached to which the duplicate is to extend, and with a very little manipulation the remainder of the model will come away. The gelatine mould can now be greased and plaster poured in, but care is necessary to prevent the gelatine composition from injuring the plaster cast, as if the former is not well greased or otherwise protected, the surface of the plaster is left in a rough friable condition, very unsuitable for vulcanising purposes. Probably a better application than grease would be a weak solution of shellac in methylated spirits, not applied with a brush, as it might leave marks, but poured into the mould and out again. When I require undercut duplicates I always use this gelatine composition, but upon ceasing to work under direction, I almost ceased to use duplicates, as they are not required except in the event of accident or when the patient may be difficult of access.

When the models are not undercut, and when a duplicate piece is likely to be required, I have another method which I have found very reliable and in my hands successful, and that is to leave the impression containing the model in hot water for a longer time than usual, in fact till the plaster is thoroughly saturated with water. The wax (by wax I mean "Stent" or "Godiva") will then leave the model without the slightest adhesion, and the original surface of the impression can be preserved—a great advantage, as a similar surface cannot be obtained *de novo* from the model by means of wax. When the model is perfectly loose, and has been carefully removed, readjust it to the *wet* model. In fact the re-adjustment and removal are close together, and you have the original impression from which a duplicate, or rather another model, may be obtained. The model should harden for an hour or two before placing in hot water. I may say, *en passant*, that these remarks are not intended for those who "supply" sets of teeth at a day's notice.

Yours, &c.,

J. HOWSE BETTS.

Rochester, June 7th, 1882.

THE FATAL ACCIDENT AT PRESTON DURING TOOTH EXTRACTION.

To the Editor of the 'British Journal of Dental Science.'

SIR,—While sympathising with Mr. Miller and with the parents of the child who died during the operation above named, I would like to draw attention through your columns to a method of preventing a recurrence of such a sad accident. It is simply to have a number of small sponges in readiness, each attached to a thin piece of bamboo (I use the outside laths of the common Japanese fans). These throat brushes, as I call them, are used by an assistant to guard the throat during the extraction of teeth while the patient is under the influence of an anæsthetic. I have always considered something of the kind to be necessary, as the patient is usually in a recumbent position, and a loose tooth might very easily slip down the throat unless it is guarded. The sponges are very useful in pulling aside the tongue, in absorbing the blood as it flows, and so—to some extent—preventing subsequent sickness. While reading Mr. Miller's communication I thought it an extraordinary case to require the removal of so many deciduous teeth. Mr. Miller says that "nine of the temporary teeth were obstructing the eruption of the permanent ones," that is, within one of *half the entire temporary set*, and the child should, at the age mentioned, have lost the central and lateral incisors in both jaws; therefore the boy

should only have had twelve of the teeth of the temporary set in his mouth. It is difficult to conceive of a condition of things to call for the removal of nine out of twelve teeth; therefore I think it would be interesting if Mr. Miller would give us the particulars of the condition of the mouth, for whilst I do not wish to censure Mr. Miller without details, I must protest against the wholesale extraction of the deciduous teeth which is constantly recurring. I may state that during a long practice I have *never* met with a case requiring *so many* teeth of the temporary set to be removed at one operation.

Yours, &c., GEORGE BRUNTON.

Hillary Mount, Leeds.

Obituary.

MR. JEAN EVRARD.

It is our painful duty to report the passing away of Mr. Jean Evrard, so long and so well known for his superb manufacture of Dental and surgical instruments. The matter is the more distressing that after a long life (seventy-five years) of constant activity, his mind gave way and he is supposed to have taken the short remainder of life that might have remained to him, for, on the morning of the 23rd ult., he disappeared, and on the following Sunday his body was found in the Regent's Canal.

It may not be known to many, although they can thoroughly appreciate his works in steel, that he was exceedingly clever in and a lover of the fine arts and sciences. He was by no means an inexpert sculptor, carver in ivory, artistic worker of metal, and a beautiful modeller in clay. He had the reputation of making the slenderest instruments in steel with the greatest strength of material, and hence the utility of most of his productions, which were never very numerous, because the most important parts of their making was done by his own hands. Steel it is well known is deteriorated both by the number and intensity of heatings. His keen artistic eye and deftness of hands enabled him to forge instruments in fewer heatings of comparatively lower temperature than almost any of his compeers, and hence, probably, his great success in achievement. Commercial success he never had; he thought more of excellence than profit.

To Mr. Collings, of Poland Street, his intimate friend and co-worker, we are indebted for the following brief but interesting sketch of his life :

Jean Evrard was born A.D. 1807, in the Cathedral Square of Toulouse, where his father was established as a "Cutler." At the age of sixteen he left home (as was the custom of youths of his age and time) and went to Bordeaux, where he spent some three years, being received into the house and enjoying the friendship of his employer's son, who was about his own age. From Bordeaux he went to Paris, passing some short time in that city. He was disappointed, and his thoughts turned homewards. However, on arriving, as might be expected, he found everything very slow in his native town. In a very short time he returned to Paris, and was employed by Charrierre. After three years he came to London, and was soon afterwards employed by Weiss making lithotrites. After thus being engaged in the first houses in Paris and London, he established himself in the latter in 1837, doing the same work and enjoying the patronage of Baron Heurteloupe and other surgeons of note in that speciality. About the year 1841, with the aid of his friend and patron, Mr. Tomes, he directed his attention to the manufacture of Dental forceps, &c. The results of his efforts are so well known and appreciated that the numerous reliable instruments which still exist and bear his name are so many MONUMENTS TO HIS MEMORY, so that nothing, perhaps, remains to be said. He was one of those whose aim was rather to produce good work than to make money. For many years past he devoted his attention to collecting works of art, of which he possessed some choice specimens, consisting of paintings in oil, sepia, &c., sculpture, a very large collection of engravings from the works of old masters, many samples of oriental pottery and bronze ; in fact, a visit to his "museum" with *himself* for guide was a treat for any person of intelligence. In addition to the works he collected, there are some by his own hand in terra cotta, ivory, china painting, clay, &c., of considerable merit. For many years he cherished the idea of forming a catalogue of the above, and giving a short biography of the artists and pointing out the principal features of the works, believing this would enhance the value of his collection, which he always desired to leave intact for the benefit of his relatives. There is evidence that this was just begun, a page or two lying about the place, written with his own hand, headed "Salvator Rossa," "Michael Angelo," or some other of those whose works he prized, showing to the last he had not given up this desire.

For some months past his mind has been giving way. He was missed from his house, No. 34, Berners Street, London, some days previous to his body being found on Sunday, May 28th, 1882. On Friday, June 2nd, his remains were interred in St. Mary's Cemetery (Roman Catholic), Kensal Green, in the presence of a few friends. Such is a brief outline of the career of one who was always unable to meet the demands made on his time, and who at the age of seventy-five left this world, having scarcely commenced the work he was desirous of accomplishing.

MONTHLY REPORT OF CASES TREATED AT THE DENTAL HOSPITAL OF LONDON,

FROM MAY 1ST TO MAY 31ST, 1882.

Extractions	{ Children under 14	486
	{ Adults	865
	{ Under Nitrous Oxide	402
Gold Stoppings.....		178
White Foil ditto		6
Plastic ditto.....		694
Irregularities of the Teeth treated mechanically.....		140
Miscellaneous Cases.....		239
Advice Cases.....		146
Total.....		3156

WILLIAM HERN,
House Surgeon.

MONTHLY REPORT OF CASES TREATED AT THE NATIONAL DENTAL HOSPITAL,

FROM MAY 1ST TO MAY 31ST, 1882.

Number of Patients attended		1561
Extractions	{ Children under 14.....	389
	{ Adults.....	696
	{ Under Nitrous Oxide	79
Gold Stoppings		62
Sheets of Gold used, independent of Pellets.....		78
Other Stoppings		288
Advice and Scaling		113
Irregularities of the Teeth		75
Miscellaneous.....		359
Total		2061

FRED. WM. BATE,
House Surgeon pro tem.

To Correspondents.

1. Communications intended for insertion in the ensuing number must be forwarded to the Editor, at the Office, 11, New Burlington Street, London, W. by the 8th and 23rd of the month, and must be duly authenticated by the name and address of the writer.
2. We cannot undertake to return communications unless the necessary postage stamps are forwarded.
3. It is earnestly requested of our correspondents that their communications be written on one side of the sheet only; and we also beg to call particular attention to the importance of a carefully-penned signature and address.
4. All communications relative to subscriptions and advertisements are to be addressed to the Publishers, Messrs. J. and A. Churchill, 11, New Burlington Street, London, W.
5. The Journal will be supplied direct from the office on PREPAYMENT of subscriptions as under:

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ANSWERS TO CORRESPONDENTS.

- "A. K. P."—The insertion of your communication might be gratifying to you but would be of no general interest. It is too personal.
- "MOLAR."—All communications for publication must be authenticated by the writer's name and address. But in no case would a letter of such personal abuse or offensive language to another be inserted.
- "V.E.R.Y. GOOD."—"Gross advertising" is not likely to be stopped for many years. General education and the raising of the status of our profession can alone work its end. Help in that, and you will do more good than in collecting such specimens as you have sent.
- G. P. COTTON.—Apply to the Faculty of Physicians and Surgeons of Glasgow.

Communications have been received from Messrs. E. Williams, "A. K. P.," T. Fletcher, T. Gaddes, C. W. Spalding, E. A. Fox, D. J. Collings, "Molar," G. Brunton, "V.E.R.Y. Good," A. M. Matthews, G. P. Cotton, G. Ward, W. & J. Jamieson, — Barth, S. S. P. (name illegible).

BOOKS AND PAPERS RECEIVED.

'Lancet.' 'British Medical Journal.' 'Pharmaceutical Journal.' 'Medical Times and Gazette.' 'Missouri Dental Journal.' 'Dental Record.' 'Annual Report of Dental Hospital of Ireland.' 'Le Progrès Dentaire.' 'The Irish Times.' 'The Indicator.' 'L'Odontologia.' 'Annual Announcement of the Dental Department of the University of Maryland.' 'Vierteljahresschrift des Verein deutscher Zahnkünstler.' 'Glasgow Med. Journal.'

NOTICE.—We desire that it may be clearly understood that our pages are open to all for free expression of their views on matters connected with our profession. We only ask for terseness of expression and MODERATION IN TONE.

When otherwise unobjectionable, difference of political or other opinion will never be regarded by the Editor as a disqualification for the admission of any communication to the pages of the **BRITISH JOURNAL OF DENTAL SCIENCE.**

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VOL. XXV.

THE MINUTE ANATOMY OF THE TEETH IN THE LIGHT OF THE BIOPLASSON THEORY.*

By C. HEITZMANN, New York.

MR. PRESIDENT—Gentlemen of the Society: It was with great pleasure that I accepted the invitation to bring before you a subject which, it seems, gains more interest from year to year. It is my purpose to say a few words about the general bearing of the new doctrine which I had the honour to promulgate about ten years ago. It was your profession (thanks to noble-hearted men such as Dr. Atkinson) which first gave cordial recognition of my work. My laboratory was favoured especially by Dentists, and, without boasting, I can say that most of the work in the investigation of the anatomy of the teeth which has been done in the last few years, has emanated from thence.

You all know, gentlemen, what the cell theory meant. I do not wish to say much about it. You all have learned what the cell was thought to be. Gradually, however, all the assertions concerning the nature of the cell were found not to be in accordance with the facts observable under the microscope; so much so that about ten years ago Drysdale, of London, said, "A cell is like a gun-barrel without a gun and a lock." It was denied that its contents are liquid, then it was denied that a nucleus was essential, and then everything was denied; still, one thing was kept—that was the name. It seems that later observers, and particularly

* Read before the New York Odontological Society, February, 1882.

Germans, thought it a necessity to adhere to that word, to which no meaning could be attached, for twenty years.

I wish to commence with the statement made at the beginning of the seventh decade of our century—by Beale, of England, and Max Schultze, in Germany. Lionel Beale, in 1860, offered a very plausible theory concerning the structure of the tissues. Unfortunately, however, his microscope, although enlarging very much, showed him very little. In his publications, for instance, an amœba was depicted of the diameter of a thumb-nail; there was a central nucleus, and all the rest of the amœba was structureless. A year later, Max Schultze issued the protoplasm theory; he claimed that the real living part of the cell is not a liquid, but a jelly-like mass—for which he proposed the term *protoplasm*—endowed with a nucleus and exhibiting granules. In his idea the constituent elements of the cell were a semi-fluid mass holding a central nucleus and a certain number of granules.

In the same year a critical mind (E. Brücke) said that we have no right to maintain that a nucleus is an essential part of the cell, inasmuch as all of us know that there are a great many so-called cells that are destitute of a nucleus. The idea developed, especially with Stricker, that even the granules were not essential; perhaps these were secondary productions, perhaps they were taken into the protoplasma from outside; everything that was left was the jelly endowed with life.

All these gentlemen, of course, knew that a body devoid of structure could not exist; and if they said structureless, they meant, in all probability, that the structure was not perceptible. Such was the condition of things when, in 1872, I took up the study, and, as you perhaps all know, started with the most elementary formation of life—with amœbæ.

I discovered a most delicate reticulum pervading the whole mass called at that time protoplasm—a reticulum which, whenever the nucleus was present, was in direct union with it and produced an investing thin layer around the amœba. This layer is by no means identical with the

membrane of the cell, inasmuch as it admits of a great degree of stretching. When I saw this reticulum, with its points of intersection, changing its shape, growing in certain conditions, I said, "Here is a formation in the protoplasm which is possessed of all the properties that are necessary for the condition of living matter, viz. *motion*, *change of shape*, and *growth*;" and I concluded that the solid nucleus, the threads emanating from the nucleus, the granules serving as points of intersection, and the investing layer are the *real* formations of living matter, while the liquid contained in the meshes is destitute of life.

The mass of the amœba, as you know, changes its shape by protruding offshoots, and creeps through the field of the microscope.

I concluded there was *contraction* of the reticulum from the fact that the granules grew larger at a certain part of the amœba, the meshes became narrower, and the liquid was driven to another portion of the amœba, which is enclosed by a continuous layer of living matter. The liquid driven to the opposite portion produced a stretching of the reticulum, which I termed *extension*.

All this seemed to be a settled fact, and was published as such, but no attention was paid to it, although some observers had seen the reticular structure before me, and in different objects. This was true of Nasmyth. I was astonished to see his figures, published in 1839, showing this reticulum in the formation which covers the crown of the tooth. In 1868 Frommann demonstrated the reticulum in the so-called ganglion-cells of the brain, as did others in different places, but none of these observers understood its significance. I was the first to maintain that all that which was formerly termed protoplasm was endowed with reticular structure.

When, at the close of the year 1874, I left Europe in disgust and despair and came to this country, I found here the heartiest support and encouragement. The first proof of the existence of the reticulum was given by J. J. Woodward, who, without knowing anything about its presence, made micro-photographs, and these plainly exhibit the

structure. Dr. Louis Elsberg early expressed concurrence in this view, based upon studies in my laboratory ; he first proposed a new name for the designation of this theory, and that is "The *Bioplason* Theory," in contradistinction to *protoplasma*, which means something formed, while *bioplason* means the forming or living matter.

The word *cell* after this discovery, of course, became worthless, and it was Elsberg who proposed for the word cell the word *plastid*, or *bioplast*. I give preference to the word *plastid* ; the word, however, does not matter if we only know what is meant by it. To-day there are two dozen of the very ablest microscopists, both abroad and in this country, who have seen the reticulum, and who fully agree with me and give me the credit for its discovery, as being the general rule in any *bioplason* formation. Strange to say, however, from certain parties some little opposition is made.

A microscopist of this city publicly announced that he had never seen the reticulum, kindly adding that very probably his microscopes were not good enough to enable him to do so. Lately Dr. Lester Curtis published an article on this subject, and stated that he did not see the reticulum. This is a very modest way to announce that one cannot see what another can. If a person publicly confesses that he cannot play on the piano a master-piece of Liszt's, we are all willing to believe it ; but does it follow that others cannot play the piece either ? What is gained by such a confession ? Dr. Curtis gives illustrations of what Elsberg and I have said and seen, and of what he could *not* see. I mention this because you are all prepared to understand that delicate observations of this nature are not easily made by every one. A great many look in the microscope but very few can *see*. If one of you who had never played the violin were handed a good violin and told to play a tune, he would say, "I can't." Let him practise for a few years and learn to play a tune. It is very much the same with the microscope. If you look in for but a short time you cannot see. It required more than fifteen years' application to enable me to see what can readily be seen, and if a tyro

comes and declares that he cannot see, I do not think such assertions should be taken as proofs against facts corroborated by others.

According to the new views, the structure of the plastid is a very complicated one. Indeed, we are astonished to see that every particle of a plastid—its smallest portions, for instance, granules thrown off—floating about in a liquid, is endowed with all the properties that formerly were attributed to plastids; that is, motion and growth. We become convinced that it is not the plastid which is the elementary organism, but the granule of living matter; and this is considered as elementary only for the reason that our microscopes do not show more. If in time to come our lenses shall be constructed of better refracting media than glass (of diamond, for instance), perhaps we may discover more than we know at present.

These are the essentials of the new doctrine concerning the structure of "protoplasm." New views were also obtained concerning the structure of organisms ever so highly developed. It has been demonstrated that the body is by no means composed of isolated elements, so-called cells, as it was formerly thought to be. The best observers have held that the body was composed of a great number of individual cells, much in the way that a house is constructed of bricks—put together by cement. The bioplason theory suggests that in the tissues of the body there is no such thing as an isolated cell, but that the tissues from the crown to the heel are one continuous mass of living matter, mainly in a reticular arrangement. Only the closed cavities of the body, the lymph- and blood-vessels, contain in a fluid isolated bodies in the shape of lymph- and blood-corpuscles, &c. In this view, therefore, the body is constructed like an engine, in which all parts, though independent to a certain degree, are connected with one another so as to build up a continuity and render even the organism of man a grown complex amœba.

In this complex body there are portions of the living matter serving in the nerve action; portions in the building up of the lungs; other portions serving for motion. There

are portions for the support of the body, such as the bones ; others serving as tools, such as the teeth.

The new bioplasson view has thrown light upon the mode of development of the organism. Gradually the fact has been acknowledged that there are at first three layers or leaves from which all tissues arise, the name epiblast designating the upper layer, mesoblast the middle, and hypoblast the lower layer. Our best modern embryologists have asserted that the nervous system, of which the first trace is visible close below the epiblast, is a festooning of the epiblast. In this view, the outer covering of the body would give rise to the nervous tissue, the most active tissue of the body—the brain and spinal cord.

In the bioplasson view the impregnated germ is nothing but an amœba flattened out, as it were. We have an upper investment of the amœba representing the epiblast, and a lower investment, the hypoblast, while the main mass of the body represents the mesoblast.

In the amœba a so-called vacuole may appear temporarily, which is again enclosed by a thin layer of living matter, and we observe a closed space in the mesoblast—the first trace of the future heart. As in the amœba, the vacuole contains a number of isolated granules—the first-formed blood-vessels containing the blood-corpuscles. It is the mesoblast only which holds blood-vessels ; the epiblast and hypoblast and their derivations will never show blood-vessels. In this view, therefore, the entire body is constructed of only four kinds of tissues, three of which, viz. the connective tissue, the muscles and nerves arise from the mesoblast.

The connective tissue, among other functions, gives support to the whole body in the shape of the skeleton, and serves in the process of mastication in the shape of teeth.

The elements of the epiblast and hypoblast are called epithelia, investing the outside of the body and the cavities which are in direct or indirect communication with the outer world.

If you compare, gentlemen, the bioplasson doctrine and its consequences with what Beale has said, you will at once see the difference.

Beale claims that in the fully developed organism the greater part, or, at least, a very large part, of the body is destitute of life. He asserts that the living matter is represented mainly by the nucleus, whereas the tissues are formed material and not alive. He claims that the most active tissues of the body, such as muscles and nerves, are formed material. This is the very objection that Bastian has raised against the teachings of Beale. In my view, every tissue is alive except the horny material, epidermis, nails, and hairs. We cannot conceive of a part of a living body destitute of life. Even in the comparatively inert tissues of the body, in the connective tissues, the bone and cartilage, the whole is pervaded by a reticulum of living matter.

The new bioplason theory suggests that there is the greatest amount of living matter contained in this mass. We readily understand by examining the muscle the reason why it moves; it is essentially upon the plan on which the amœba moves. The nerve tissue, Beale suggests, is formed material. We say it is living material of a very concentrated form, and thus we understand and get an insight into nervous activity, which is based entirely upon the motion of this delicate reticulum. The new doctrine suggests a number of facts, so far in full harmony with all our observations. The connective tissue is characterised by the presence of what is formed or the glue-yielding substance. Not every variety is glue-yielding. Some of these substances seem like glue, and others, upon being boiled, give a gelatinous liquid, but not sticky; these are only special varieties of one and the same substance.

The new theory suggests that the inert basis-substance arises from the liquid present in the meshes of the bioplason reticulum, which, although concealed in the basis-substance, remains unaltered.

The four varieties of connective tissue are, the jelly-like myxomatous, the fibrous, the cartilaginous, and the bony. All these varieties have their representatives in the tissues constituting the tooth, and in the tissues attached thereto. The myxomatous tissue, the best representative of which is the umbilical cord, is present in the pulp of the tooth. The

fibrous connective tissue, the best representative of which is tendon, being dense, firm, and striated, we find about the tooth in the pericementum and periosteum. The cartilaginous tissue is not directly involved in the formation of the tooth, but it gives rise to the jaw-bone, and plays an important part in the formation of the jaws; while the bony tissue is of the greatest importance, inasmuch as it furnishes the sample of the structure which, with some variations, is found in the formation of the tooth.

In 1873 I first asserted that all the various connective tissues are provided with living matter. So great was the surprise of the learned world at these assertions that several years afterwards Frey, of Zürich, who wrote a book, tried to ridicule the whole thing and to kill me off by placing me in a foot-note in his book. Of course, it is easy enough to ridicule assertions so long as we are not satisfied that they are correct, but if they prove to be correct such practice becomes very dangerous.

Stricker, of Vienna, in whose laboratory I executed much of my work in 1873, saw most of my specimens, although I did not care much for his opinion. He was slow in accepting my assertions, but four or five years ago he published an article claiming that the reticulum was present in the nucleus. Last year he surprised me with a copy of his latest publication at that time, wherein he corroborated the presence of the reticulum in salivary corpuscles; more than that, he asserts that the reticulum is present in the cornea of the eye, and that where at one moment is protoplasm, after a while basis-substance will be seen, and, in the place of basis-substance, after a while will be seen protoplasm.

In Stricker's laboratory Spina, two years ago, made the wonderful discovery that this reticulum existed in the cartilage—something that I published in 1872 and 1873. He discovered a new method for its demonstration, namely, treatment with *alcohol*, a method so simple that to-day even a child can see the reticulum in cartilage.

Meantime, I have not been idle. In the past seven years I have demonstrated all that to hundreds who were desirous to learn something about the new theory. It seems to me

that what we have done in the past seven years in this country carries us quite ahead of the old world; we have become the leaders in this line of investigation.

As regards the bone-tissue, the idea was prevalent for a number of years that there were in it spaces filled with liquid, but nothing was known about the seat of life in the bone, for this reason: that a discrimination between the living and dead (necrotic) bone was impossible.

Virchow thought that the cells, which at that time were identical with the lacunæ, were the seat of life, although in his view the cells contained a liquid. With our modern views it is hardly necessary to say that a liquid is never endowed with life. In 1870, in Stricker's laboratory, it was first found that the lacunæ of the bone tissue held protoplasm. In our present views the bone is not only supplied with living matter, with plastids in the lacunæ, but also the offshoots of the lacunæ—the canaliculi—contain delicate filaments of living matter connecting the plastids; thus the bone tissue is rendered an uninterrupted reticulum of living matter just as is any other tissue.

(To be continued.)

NEURALGIA—ITS PROPHYLAXIS.

By S. S. WILSON, M.D., Xenia, Ohio.

IN an article upon "Neuralgia; its Pathology and Etiology," published in a former number of the 'Ohio State Journal,' we spoke of the obstinacy of this disease; of the necessity for the exercise of earnest, persistent efforts to conquer it; of the likelihood of mortification on account of repeated failures, and of endangered professional credit at the hands of dissatisfied patients. The lapse of a few months has not relieved these difficulties, but as we approach the subject of treatment they seem like mole hills grown to mountains. It will be our aim in the present article to point the practitioner to a few of the most im-

portant principles of prophylaxis, that he may use them as a foundation upon which to build, as his cases may indicate. It is particularly true of this disease that "an ounce of prevention is worth a pound of cure."

In the article above referred to we attempted to give special prominence to the ideas of heredity in this disease, and of the central location of the essential lesion. These two points furnish the foundation for the following article.

We all recognise it as a clinical fact that shortly before or during the period of puberty is the time when the neuroses most frequently begin to manifest themselves. Prior to this period much can be done to avert the evils of a neurotic inheritance; and, first of all, the medical adviser should make it his business to impress upon the minds of parents of neurotic children the importance of persistent efforts to accomplish this end. Within the nervous centres of such a child there are planted seeds, which, if allowed to grow, will not fail to yield a harvest, more or less abundant, to the detriment of that child. Our aim should be, first, to prevent the germination of these seeds; and, failing in this, we should next attempt to prevent their growth. The period of life at which treatment should be begun is the earliest at which the child can receive a mental or a moral impression. The education of a child, at home and at school, should be attended with extreme care; and here we will mention, only to condemn it, a practice which is almost universal with nervous parents, and one which is most pernicious to the neurotic child. We refer to the practice of making the ailments of children, whether slight or severe, the subject of much conversation in the presence of the children themselves. There are few practitioners whose observation will not embrace many such cases, and the most dilatory student cannot fail to recognise the very bad moral effects which are the inevitable results of such a practice. For this practice the physician is frequently responsible, the desire for a reputation leading him to make exaggerated, if not false, statements as to the condition of the child, and also to feed that longing of the nervous parents to think that there is something exceedingly peculiar about the case of *their* child.

A statement to this effect is usually sufficient to secure the discussion of the case with every presence into which the child may come, and but little time is required to create a morbid condition in the child's imagination, even if it does not exist in fact. I repeat it, that these children should be spared the evil effects of having to listen constantly to the discussion of their own ailments. Rather should their minds be continually engaged with external objects, and introspection always discouraged.

The mental training of the child should be attended with extreme care, especially during the period of sexual development. This is a portion of the physiological development of the child which cannot be interfered with with impunity. It must be accomplished in its proper time, and to this end the minimum amount of mental work should be required of the child, for already the nervous centres are being exhausted of their reserve nerve force, and if we add still another drain, some portion of the great nervous centre must suffer starvation, and a disorderly nervous action result. On this point our female population, from fourteen years of age upward, is a living commentary. It is a common thing to be accosted by a patient, whose general nervous system has suffered actual starvation by the forced development of the mental faculties, cotemporary with the development of the sexual organs. Under such circumstances is it any wonder that a disorderly nervous action is developed, producing explosive manifestations in the motor apparatus and pain in the sensory?

The nutrition of the child is a matter of vital importance in connection with this subject, and is a point very much neglected, both by parents at home and by instructors at school. During the period of bodily development, and especially during the period when, in addition to this, the development of special organs is making heavy drafts upon the nervous centres, an abundant supply of the most nutritious food is absolutely indispensable. It is a sad commentary upon the profession in former years that plethoric and anæmic children alike were compelled to undergo, for almost every trouble, a course of depletion, both in diet and thera-

peutics, a course most hazardous to the nervous system and incompatible with nervous health. The supply of nutriment should have no limit except the capacity of the digestive organs, and more frequently will we find occasion to reinforce this regimen by a course of cod-liver oil, iron, quinia, and strychnia, than to detract from it, either by limiting the supply or by depleting the system of what it has already received. Years ago the profession awoke to the fact that bloodletting was a procedure rarely called for, and that the system that was being drained by disease needed to be fed rather than depleted. Carrying this common sense into the subject in hand, it requires no far-sightedness to see that during the period of bodily development, and especially about the period of puberty, the nervous reservoir, whose outlet is at this time greatly increased, must have its supply correspondingly increased, or in time it will become exhausted. The physiological, as well as the pathological, drafts upon the system demand a supply, and if the draft is temporarily increased the supply must be increased correspondingly. This we must accomplish by an abundant supply of the most nutritious food, and, if need be, by a course of therapeutics that will reinforce it. We must fortify the nervous system against impending dangers, and to this end a liberal diet is the most efficacious means which we possess. The importance of this measure cannot be too much emphasised; for, even at this late date, there are found persons, and we are sorry to know that there are medical men who, though recognising the fact that rapid and incessant additions are being made to the tissues of children and young people, fail to perceive the demand for almost unlimited supplies of food.

One is almost led to profess adherence to the doctrine of "The survival of the fittest," as he sees the absurd theories in regard to the dangers of excessive "grossness of blood," and the consequent starvation of children, going down before the assertions of common sense, that the rapidly-developing body must have a liberal supply of the most nutritious food.

Sexual irregularities are fruitful causes of the neuroses in persons who may be considered to possess a neurotic disposition. Prominent among these, we may mention onanism,

and some of the diseases peculiar to females. Onanism is looked upon as a very active cause of many nervous affections ; but, while we believe that excessive onanism, by lowering the tone of the nervous system, may excite an outbreak of some one of the neuroses, where heredity or some other predisposing cause has been at work, we are firmly convinced that the baneful effects of the secret vice have been overestimated. Menstruation in its faulty forms, and uterine diseases by their peculiarly depressing effects upon the nervous system, frequently precipitate a neuralgic habit in a neurotic subject. The presence of these irregularities indicates the treatment to be instituted for the prevention of the neurotic sequel. Where the seeds which have been planted in the neurotic constitution have already germinated, measures to prevent their growth present themselves in the avoidance of violent mental or physical exertion ; in protection from the extremes of heat and cold ; in preservation of pure atmospherical surroundings ; in the continuance of a liberal diet ; and in a due regard to the physiological changes which constitute the natural crisis in the life of the organism.—*Ohio State Journ.*

FILLING TEETH WITH COHESIVE FOIL.*

By E. G. BETTY, D.D.S.

MR. PRESIDENT:—Your Executive Committee has seen fit to honour me with an appointment among the essayists upon the programme, and while I deem it the duty of every member to contribute towards the general fund, I am, nevertheless, of the opinion that an older and more experienced head should have been selected to execute the task relegated to me.

Besides this, the subject-matter is one that few are now fain to write about; not that it is difficult at all, but from

* Read before the Mississippi Valley Dental Society, March 2, 1882.

the fact that it has been so belabored and rehashed that the average dentist turns up his nose in disgust when the very name is mentioned.

It is, however, a subject of more practical importance to the dentist than any other usually discussed at meetings such as this, and one that is more talked about, and least understood. From the very nature of things it becomes almost impossible to treat of it without the remarks degenerating into a mere description of individual methods at the chair. Each and every one of us is apt to consider his own peculiar method of operating as the *ne plus ultra* of professional attainment, and cannot understand why it is that his ideas are not at once adopted by the profession at large. The attempt, then, upon the part of one whose experience is of "tender years," to correct what he deems hurtful to the efficiency of an operator, would seem to imply an egotism that does not exist.

Were all writers and speakers to cease advancing their ideas for fear of incurring the charge of egotism, an Egyptian darkness would soon obscure all that is bright, progressive, and useful.

Thus it is that a hesitation is felt in approaching a subject that contains nothing in the nature of news, and a great deal upon which a reputation is either made or wrecked.

So diverse and deeply rooted are opinions and methods of procedure that one can scarcely hope to bring out of the existing chaos anything bearing the semblance of uniformity in the handling of material for filling.

The several men of note in the profession, whose modes of operating might be mentioned in illustration of this point, all have more or less experience in their particular lines, and are looked upon by their followers as standard authority. They expound their methods in the journals and at society meetings, and are applauded just in proportion as they harmonise with the views of their auditors. Each advocates some one or other specific method of manipulation, or brand of material to use, and are the means of doing much good or incalculable harm, when they are measured by the results that obtain.

It is not the present purpose to enter into detailed specifications as to how a filling should be built, nor to advertise in an indirect way any particular make of foil.

We all have a more or less correct idea as to what is necessary to do in the operation we call filling. With the *idea*, however, we have less to do than with the *manner* in which the work is done, and the form of material with which it is accomplished.

The slouch leaves his disgraceful mark upon every tooth he touches, and deludes not only his patients, but himself as well, that the work is done in a masterly fashion. He prates loudly in the meetings, talks with grace and apparent candour; is at great pains to heartily coincide with any really good operator who happens to describe a fine operation, and remarks, "That is just the way I do." Possibly, but when you come to analyse him by the evidence of his handiwork the proof is plain that his conception of what he has heard is limited by his meagre powers of execution. For this reason it avails but little how much stress is laid upon the importance of this, that, or the other step in an operation.

There is a kind of conservative, who is frequently "too utterly utter," and manages to preserve so much of a decayed tooth that there is no room for the introduction of a filling worthy of the name. In fact, he is guided by the direction the decay has taken, and has not the courage to deviate from that course. The cavity and its walls are prepared by the decay, and with such a preparation for filling we necessarily are not surprised to see it stuffed with cylinders of soft foil, or a bolus of seductive crystal gold. Such plugs, of course, are not calculated either to save the tooth or subserve the purposes of the destroyed portions. They can have no integrity in themselves, and certainly do not obtain any by catalytic action from the teeth containing them. Undoubtedly a decayed tooth, if left alone, will surely be annihilated. What folly, then, to tinker and fiddle around, trying to save every crumb of tooth-structure that does not happen to be actually saturated with rottenness.

The tooth is sick—sick unto death; part of its structure

is obliterated, and if radical measures are not at once adopted, there remains no hope for its salvation. Chisel and file should be unsparingly used until every advantage possible is gained, by putting into proper shape the remainder of the tooth. None but the timorous hesitate to cut away sound tooth substance, when by so doing direct access and vision into the cavity may be had, and every advantage secured to make the filling as it *ought* to be made. *Everything in the way of excavation that will add to the ease and thoroughness of the introduction of the gold will proportionately increase the preserving power of the plug.* The operator who is conscious of an ability to restore lost parts with foil will see the necessity of a radical excavation of the tooth he is about to redeem. The more solid parts of the tooth are the ones upon or in which to make anchorages. If one or two strong parts remain they will ordinarily be sufficient foundation upon which to restore lost parts, and also obtain protection for themselves.

The details of grooves, dovetails, angles and retaining-pits, have been reiterated so frequently that mere mention of them will suffice.

There remains, now, to consider the form of gold to be used. If but two walls are standing, or the subject for restoration is a mere root, soft foil, in any shape, is out of the question. Our hope, then, rests upon what is known as cohesive foil. And right here is one of the most stubbornly contested points we are expected to pass upon. The number of brands is legion, further multiplied by the number of weights made and the infinite variety of forms in which the foil is prepared for use. All forms of blocks, cylinders, pellets, ropes, and ribbons are simply foil with another name. To make a selection, then, of the form of foil that will secure the best results involves a study of the requirements that are to be met. The foil, when introduced, should maintain a permanent integrity in spite of all causes militating against it. This permanent integrity includes, of course, indestructibility, hardness, tenacity, and cohesion, for if one or other of these elements were abstracted no plug would remain intact.

All forms of foil possess some one or more of these qualities, but they greatly differ in the degree, and it is for this reason that a discriminating intelligence must be exercised in determining what form possesses all these attributes in the highest perfection.

The metal gold has certain properties that never desert it, no matter what shape it is worked into ; as, for instance, colour, specific gravity, thermal and electric conductivity, &c. With these, however, we have nothing to do, as they are ever present, and are conditions and susceptibilities beyond our control. It is the more mechanical properties that concern us most, they being the ones we can modify to some extent to suit our wishes.

The molecular force, cohesion, exerts a greater influence over the results of our operations than any other property of gold, and is *the* one upon which the whole system of filling depends, having, in fact, only a few years ago caused a complete revolution in applied Dental science. If studied closely it is not difficult to trace to cohesion the hardness, tenacity, ductility, malleability, &c., of the gold as a metal, and when in the form of a plug its integrity, indestructibility, and preserving power. This, then, is the prime factor that must determine us in the selection of the form and weight of foil with which to construct our fillings.

Granting the premise, it may be laid down as a principle that *the fewer the surfaces brought together the greater will be the resisting power of the mass*. Experience has proved this to be a fact in many departments of industrial pursuits, and why not in dentistry as well ?

With this principle in view, we may at once dismiss all forms of crystal gold, their granular nature multiplying indefinitely the number of surfaces to be united. At all events, that form of gold cannot be included under the term foil.

To put our principle into practice implies an increase in the thickness, and, consequently, of the weight of the foil that is to be used. It may be charged in this connection that, assuming the necessity of fewer surfaces to weld, the foil may be augmented in weight and thickness to an unlimited degree.

Very true; but it must not be forgotten that beyond a certain point we would lose a very important property, indispensable to the preserving power of the foil, namely, adaptability. We must, then, adopt a medium weight, one that will combine the advantage of a reduced number of surfaces with an easy adaptability. These are best had, in all probability, in that foil called No. 60. This weight, in the estimation of a great many operators, possesses in the most eminent degree a combination of all the qualities necessary for a perfect filling. A single strip of it is equal in weight to a pellet or block made of No. 2, foil folded thirty times, or a block of No. 4 folded fifteen times.

The block of No. 2 has sixty surfaces to be welded; that of No. 4 has thirty. Each layer of this light foil is weak just in proportion to its tenuity, its little strength still further reduced by the strain necessary to keep in contact its sixty or thirty surfaces. How much further the cohesion of a plug made of this foil is reduced when the contact surfaces are multiplied a hundred fold!

The same is true of plugs made of ribbons or ropes of light foil. No wonder, then, that fillings made of light numbers crumble under the plugger and disappear when subjected to the crunching process of mastication. As a means of restoring lost structure, especially contouring, they are of little value, soon losing their cohesion and disintegrating in consequence. In bold contrast with them stands the reliable heavy weight. It has but two surfaces to weld together; its bulk is reduced to a fraction; it will stand as much malleting as the tooth, without losing its receiving surface; it is hard and tough to the last degree, and will wear for years, all the while maintaining its solidity and outline uninjured.

Believing that more good is accomplished by a radical excavation of cavities and the use of a foil that *is* foil, the hope is expressed that it will come into general use. We will then hear less complaint about imperfect cervical joints, broken corners, and the whole list of calamities that usually attend the performances with æsthetic forms of gold.—*Dental Register.*

British Journal of Dental Science.

LONDON, JULY 1, 1882.

CORRECTION OF THE DENTISTS' REGISTER.

As will be seen in our report of the meeting of the General Medical Council (p. 659), a most legitimate and praiseworthy correction of the Dentists' Register has been made, one which we may confidently predict will be appreciated by nearly the whole body of practitioners, and give a wholesome warning to the few who still abuse the privileges of the diploma, the elevating standard of which it should be their unswerving duty to raise and uphold to the uttermost. Would that we could see, or even hope to see, Dentist's advertising utterly abolished, but such an Elysium is, we fear, only to be attained, if at all, in the remote future. In the terribly mixed state of our ranks there are many who do not even desire to be considered as professional men. They regard their calling as a trade pure and simple, advertise it, push it, and conduct it as such, openly and persistently. However repugnant their method of practice may be to our feelings or damaging to the prestige of our professional status, we are bound to admit that those who practise it show, at least, that they possess the courage of their convictions. If, as Mr. Macnamara pointed out, advertising can scarcely be classed in the category of "felony, misdemeanour, or infamous or disgraceful conduct in a professional respect," it is difficult to see how any great improvement can be expected, except by the gradual influx of practitioners of higher education, and with refinement of tastes and habits, which change, time alone can accomplish.

We can almost feel a sympathy with the man who has the honesty to say, in effect, that—according to his mistaken

views—the diploma he has striven for and obtained prevents his obtaining a living, and sacrifices it accordingly rather than give up what he conceives to be his duty. We can at least admire his candour. But we can feel no compassion whatever for the man who having obtained a diploma debases it to secure his own selfish ends, regardless of his undertakings, expressed or understood, to keep it unsullied by pursuing a reputable career. The Faculty of Physicians and Surgeons of Glasgow deserves the warmest thanks of the profession for their prompt and jealous guardianship of the honour of their licence, and we can only trust most earnestly that such a worthy example may be unrelentingly followed by all other licensing bodies throughout the kingdom. Thus, and thus alone, can the Licentiate'ship be made to retain the distinction it merits.

ANOTHER new monthly periodical of Dental literature, 'The Southern Dental Journal,' has been brought into existence in Atlanta, and bids fair, like most of its American contemporaries, to prove a literary success. The issue we have been favoured with is ably edited, and contains much interesting matter. We give it a most cordial welcome.

As at present informed, the case of "Charles Smith," the first under the Dental Act of 1878, will be resumed at the Marylebone Police Court on Wednesday, July 5th.

Manipulative Miscellany.

THE DOWSETT SUCTION VALVE.

MESSRS. C. ASH & Co. have a new bedding for the above valve, both in gold and alloy. For the information of those who have not seen this valve, we may explain that it is a contrivance let into the palate of an upper plate and in direct communication with a suction chamber, having an india-rubber disc so arranged that the wearer can exhaust the air from the suction chamber when the disc closes the opening and so retains the plate *in situ*. The difficulty hitherto has been that this little valve has had to be *fitted* into the *vulcanite palate* with a drilling or cutting tool made for the purpose, but in cases where the plate was unexpectedly thin, or by heedlessness too much was cut away, it was rendered useless. To obviate this possibility Messrs. Ash have constructed a socket or fitting to be placed on the palate of the model and held in position with a round-headed nail; around this the rubber is packed, and when removed from the flask it is ready at once for the valve to be adjusted. This is very easily effected by a little twist, which is one of its advantages, as it facilitates the renewal of the discs as often as necessary.

PLUG TRIMMER.

MR. RUTHERFORD has a new and useful addition to instruments of this nature, made by Messrs. S. S. White. It consists of a short three-square file on an ordinary steel handle, the peculiarity being that one of the three blades of this file is in the form of a deep longitudinal groove, beautifully polished. This is to be lodged on the mesial or distal angle of the tooth adjoining a plug, on which the file is worked with an up-and-down motion, ensuring the edges of the gold being even with the enamel. This appears to be an exceedingly useful instrument.

PORTABLE LATHE.

MR. J. RITCHIE has completed a most ingenious and effective Dentist's lathe, admirably adapted for travelling and for occasional use at invalids' houses, although it is strong enough and has power enough for even ordinary everyday use. It is not by any means an easy article to give a lucid description of, simple as it appears when seen. It is constructed of two disconnected parts, the lathe and the treadle. The first (the lathe) consists of a double-ended head carrying grinding wheels, brushes, drills, &c., attached to a clamp capable of easy attachment to table, mantle-shelf, or other convenient position, below which is a small fly-wheel, this wheel as well as the small pully on the lathe-head, has a deep angular groove over which passes a *square* leather band. This arrangement admits of the band lying fairly loose, so avoiding pressure on the bearings and yet never allows the wheels to slip. On the spindle that carries the fly-wheel, and close to it is another little similarly grooved pully. The second part (the treadle) is a little iron frame that stands steady on the floor, having a portion hinged with a spring beneath to keep it up always ready for the foot to press it down, from this pedal projects a short arm. At the side of the pedal is a second short arm hinged in like manner and working parallel with the other arm but having a spring under it to keep it *down*. Fastened to the extremities of these arms is a leather thong, which has merely to be looped over the pully by the fly-wheel and the lathe is ready for use; this thong can be adjusted to any length according to the height the lathe happens to be from the floor. The action is peculiar, rapid, and very powerful; when the pressure of the foot is exerted the thong grips the pully and the lathe revolves—the second arm being raised and by its downward tendency holding the thong taut—on releasing the foot pressure the thong slackens and the second arm draws it loosely over the pulley, the impetus of the fly-wheel keeping the lathe in motion during this instantaneous backward movement of the thong which is then again ready.

This lathe is simple in reality and can be packed in a very small compass and is of light weight for carriage.

NEW PEDESTAL SPITTOON.

HE has also Scagliola Pedestal Spittoons like those ordinarily in use, except that the top is of excellent imitation instead of real marble, and the cost only about one third.

WESTON'S PIVOT TEETH.

THE DENTAL MANUFACTURING Co. have a considerable stock of these elegant and natural-looking teeth. They are like ordinary flat teeth, only that the back of the neck is well hollowed out, above which is a square-cornered flat depression, in which are two short pins. A platina pin, strong, square edged, barbed, and terminating in a little flat plate—just the size to fit into the depression in the tooth—is to be fitted into the canal cavity of the root on to which the crown is to be fastened, and the crown also fitted to the root. The crown may then be riveted and soldered to the pin, and is ready to be built on to the root with amalgam, gutta percha, or other plastic filling. We wish the pins of these teeth were long, as they could then be used also for vulcanite or celluloid work, their hollow shape would render their fitting to a model very simple.

RICHMOND'S PIVOT TEETH.

THEY have also these teeth, which are similar to the Weston's except that the backs have a deep perpendicular groove in which a platina pin can lie. The pins of these are also short, we wish they were long. They are for adjusting and fixing in much the same manner.

Literary Notices and Selections.

DENTAL HYGIENE.*

BY DR. W. P. RICHARDS, Elgin, Ills.

(Concluded from page 598.)

THIS, you say, is the fault of the patient ; but if the Dentist failed to understand and point out the cause of decay where possible, and especially if he did not insist, most positively, upon thorough cleanliness, his duty was poorly performed.

If the causes of destruction are allowed to remain, if the destroying forces continue to work, the effects will be seen in the near future.

In diseases and systemic ailments which produce an acid condition of the secretions of the mouth, it is evident that a restoration of the system to a healthful state must be effected before caries can be arrested.

The aid of the physician may be necessary, but I wish to remark right here, that the Dentist should be informed well enough in regard to these general conditions and diseases, and their local effects upon the teeth and mouth, to ascribe the lesions to their causes, and thus proceed intelligently in whatever is required.

From observation I am of the opinion that very much of decay is owing to lack of cleanliness.

If this is not the case, why are more decays found upon the approximal surfaces ?

As soon as the temporary teeth begin to erupt they should be brushed thoroughly by a soft brush and tepid water, so that all organic matter may be removed before fermentation and the formation of acids.

Mothers should be taught that this is absolutely necessary,

* Read before the Illinois State Dental Society.

not only for the present good and happiness of the child, but they should be impressed with the fact that upon the care and retention of the deciduous teeth much of the future of the permanent teeth depends.

The nervous system is more susceptible to irritation in childhood than in adult life; the temporary teeth are more vascular, and if carious and diseased, more quickly act as existing causes of general ailments.

Usually these young sufferers are the victims of gross neglect.

If thorough cleansing from the beginning had been the habit, exposed pulps, abscesses and sleepless nights would be rare among them.

Incipient decay of the teeth is often formed from the retention of food by the overhanging margins of the gums during eruption.

Cleansing during the periods of eruption of both sets is very essential.

Probably all of us have seen the pernicious effects of acid medicines upon the teeth.

The mineral tonics are freely prescribed in many diseases, and often the effects are deplorable.

After having put a patient's teeth in good order, with instructions to properly care for them, it is very mortifying to see that person in a year or two with teeth nearly destroyed, or many of them in bad condition.

I have had such cases, where the trouble was clearly owing to medicines alone, and have seen others, where such a result occurred after pregnancy and childbirth, when tonics were given.

How much of the result was to be ascribed to the medicines in the latter cases cannot be determined, for, during the periods named, there are unusual demands upon the entire organism, and the teeth often suffer, as do other parts of the body.

After iron tonics are given the teeth become a brownish yellow, which is difficult to remove, as the stain penetrates.

When necessary to give these medicines, the patient should be apprised of the fact, and instructed to use some alkaline

mouth wash as lime water or solution of bicarbonate of soda, taking the medicine through a glass tube.

Physicians should be more careful in this matter, and we should call their attention to it whenever possible, as well as warn our patients.

Injurious dentifrices and tooth powders are to the Dental what patent medicines are to the medical profession.

Usually those who clamour most loudly for "something to cleanse their teeth," use the brush and toothpick the least.

I do not know when the idea of using charcoal originated, but those who have used it to any extent usually have deep grooves across the necks of the incisors.

Most of the tooth brushes in market are poorly adapted for their purpose. Some that I have lately seen, having bristles of unequal length, thus giving an uneven surface, are an improvement.

The manner of using the brush is important, an upward and downward movement, as well as across the teeth, will be more effective.

Quill toothpicks and floss silk will be necessary for the approximal surfaces.

For common use I recommend precipitated chalk (carbonate of lime), as it neutralises acidity and has a pleasant effect upon the gums.

Frequent examinations should be insisted upon, for, by them, attention can early be called to a matter that, if allowed to run, would be serious.

The most of our profession are very remiss upon this whole subject of hygiene. To get our patients to understand the importance of cleansing their teeth, and thus aid our efforts in their behalf, is one of our highest duties to them, and the greatest service we can render.

Indeed, right here we need a "new departure," and he who induces his patients to cleanse their teeth will save more teeth by this means than by all other systems or departures.

It will be necessary only to mention salivary calculus as a dental destroyer, to give us one more argument in favour of cleanliness.—*Missouri Dental Journal*.

INFLAMMATION.

By GALEN, Xenia, Ohio.

By the term *Inflammation* is meant that peculiar morbid condition that is characterised by *unnatural redness, increased heat, pain, and swelling*.

The co-existence of these phenomena, in one part, may be considered as sufficient evidence of inflammation of that part. If this condition remain for only a short time present in one part, certain *modifications* of the *nutritive* and *secretory processes* take place.

The absence of any one or more of these phenomena does not preclude the existence of inflammation. For instance, pain is sometimes wholly wanting, and abnormal heat and redness often disappear before the inflammatory process ceases. We frequently in the definition of any natural process find a difficulty consequent upon their closely allied relations, that makes it almost an impossibility to separate them, even for the purpose of description. We shall endeavour to be as explicit as possible, and convey our ideas in such language that our readers will not mistake our meaning.

It will be our aim in the discussion of this subject to include the series of local changes, which *commence* when *simple irritation ceases*, and conclude with the *loss of life* or *restoration to health*.

In the outset we remark that *Inflammation* is by far the most important of morbid conditions, and is of vital importance to the Dentist as well as the physician. It either accompanies or forms an essential part of all serious diseases, and in many cases constitutes the chief source of danger.

We will endeavour to present the subject in its general phenomena, progress, and results; its nature, its causes, its modifications in the different tissues, and those varieties that are ordinarily termed specific.

Redness.—We generally observe this phenomenon in the outset. If followed by others, in a short time, we say that

the patient is affected by some influence that is likely to produce inflammation. Redness is of various intensity and shade according to the degree of inflammation and its stage, part affected, the state of the system, and the nature of the cause.

We find every grade of colour, from the light rose colour to a deep crimson or purple. In some cases we observe it in points, in lines, or streaks, in minute ramifications, and in uniform redness, simulating blushing. It often assumes a degree of intensity in the centre or point of irritation, then radiates from this centre to adjacent parts, becoming paler and less prominent, until it is finally lost in the surrounding healthy tissue.

Again, it may be stopped by an abrupt boundary, and be of uniform intensity throughout, the brighter hues indicating or accompanying the more active grades, the darker, that proceeding from some specific cause. Again, we find that the dark, or crimson, or purple redness is indicative of enfeebled constitutions.

The redness will sometimes disappear under pressure, but will return the moment the pressure is removed. The length of time occupied in the return is a good diagnostic sign in determining the degree of inflammation.

Now and then we are unable to remove redness by pressure; the reason for this will be stated subsequently.

Believing that the enlargement of the blood-vessels is obvious from the increased redness manifest to the naked eye, it becomes a matter of some moment to determine the difference between *inflammation* and *congestion*. It may be briefly stated as follows:

The accompanying symptoms and their products, with the general features that the parts involved present. For example:—We have greater heat and pain in an inflamed part than in the surrounding tissue. We have earlier and more abundant effusion, fervid redness, the increased flow of blood with a strong and throbbing condition of the arteries.

The increased flow from the veins of the part shows quite clearly that there is an increased, or at least accelerated, motion of the blood instead of diminished motion. This

latter condition of things is known to constitute the chief symptom in congestion. Common observation of the pulse of arteries leading from inflamed parts, will show increased vascularity or a greater volume of blood passing through them; or, more briefly, there is determination of blood to the inflamed part.

Allison and others found by experiments that the calibres of these vessels are enlarged. This is due to want of tone or diminished tonicity in the affected arteries, and is the chief cause of determination of blood.

That the motion of blood is increased has been proved by Lawrence and others, venesection being performed at the same time and in the same manner in both arms of a patient who had inflammation in one hand, and it was found that the flow of blood from the diseased hand was much greater than from the other; hence we may conclude that determination of blood is *present in inflammation*.

The blood-vessels in the vicinity of the inflamed part are the media through which this increased flow to the inflamed part must pass to form this state of things from the outset, and to furnish the abnormal condition, material, or food, to keep it alive.

But should we stop here, and could not point out other and more prominent symptoms, then there would be no difference between determination of blood and inflammation.

When we are unable to remove redness by pressure, we say it is owing to the enlargement of the capillaries that keep present in the inflamed part a superabundance of blood. Extravasated blood is also a cause of redness, and pressure, unless long continued, fails to remove it. The colour is occasioned by the richness of the blood in *red corpuscles*. Again, the increased flow being enriched by the red corpuscles, communicates a redness that is allayed or removed only by the removal of the cause that produced this condition. Hunter says that the intense redness may be caused by the blood passing into the veins from the arteries unchanged. But we have swelling, and that peculiar pustulous appearance that indicates the point of effusion. Again, we find from the investigations of microscopists, such as

Thomson, Hastings, Kaltenbrunner, and Marshall Hall, that their evidence is in favour of the doctrine of "obstruction to the passage of the blood in inflammation."

In the web of the frog's foot when inflamed the blood is seen to move more slowly in the part most irritated, gradually accumulating in the vessels, reddening them, increasing their calibre, moving more and more sluggish until, finally, motion ceases. The contiguous vessels then become the medium of the increased flow. A prominent point to be observed is this retardation or arrested condition of the circulation; this is the *opposite of determination*.

We now come to the *cause* of obstructed blood in *inflammation*.

Cullen supposed a spasm of the extreme vessels to be the cause; Dr. Wilson Phillip claimed that a weakness of the capillaries was the cause of the obstruction; Dr. John Hunter's opinion was that the active and vital enlargement of the vessels was due to what he denominated "*active dilatation*." The German writers use the "*tergor vitalis*," or *inflammatory erection*. Haller ascribes to the circulation of the blood certain supposed properties which he calls "vital attraction and repulsion," on the hypothesis that the blood was drawn into and repelled from parts independent of all motion of the living solids. This assumption needs confirmation. It delegates to the living body a physical power, and a discerning intelligence in the exercise of that power, that transcends all known physical law.

We are able to account for some of the known physical and vital laws governing the living human body in health and disease without recourse to the hypothesis of any mysterious force or agency. And now we propose, if possible, to give a rational account of this phenomena of inflammation.

It is said that when an artery is tied that the blood ceases to flow in the open end of it, and passes away by the adjoining branches, which are enlarged by the increased quantity, while the tied end becomes empty. But we know that this is not true, at once, for there is a strong pulsation above the ligature of tied arteries, which sometimes, in cases of accident, gives rise to secondary hæmorrhage.

This shows, beyond a doubt, that the blood has no inherent disposition to seek new directions. When a coagulum has formed sufficient to prevent the passage of the current of the blood, the vessel loses its tonicity, and contraction of the tube takes place, and the contents of the vessel are directed into adjacent branches. This certainly does not prove any self-acting power, nor are we led to suppose or ascribe any independent action separate and apart from the contractions of the solids.

It has been implied, and we now make the declaration, that inflammation may originate either in determination of blood or in congestion, and that inflammation essentially comprises in its morbid elements both these phenomena.

Take the familiar illustration of the web of the frog's foot, and we find that irritation causes first determination then congestion. These facts being the result of enlargement of arteries, veins, and capillaries. When we apply a strong irritant, a drop of essential oil to the web, the blood-vessels speedily become enlarged, those most inflamed by far the largest and reddest. The blood soon begins to stagnate and coagulate till complete congestion takes place. In the course of our argument the reader will observe that the reason for the tardy motion of the blood in enlarged capillaries that accompanies inflammation is still an open question. We state, in the first place, that the blood itself (or the blood-vessels) is the only place to work for a satisfactory solution to the question. It has been stated that loss of tone and flaccidity of blood-vessels is a cause of the diminished current by removing tone, by which the vessel itself maintains its calibre and the proper tension necessary to transmit onward its contents. Vessels thus weakened soon become inelastic, and instead of conveying their contents equally and with uniform force, become distended and tortuous, and do not receive the blood properly, and by their mass, as well as inelasticity, in a measure break the force of the current.

In determination of blood the arteries are enlarged, so are the capillaries; the circulation, therefore, is increased. In congestion the capillaries alone are enlarged; the motion or current is therefore impaired but still the blood will find its

way through the mass, but slowly. But if we add to the congested capillaries the increased and abrupt force of large arteries, the atonic congestion of the lesser vessels kept in mind, the propulsive power of the current is impaired.

It therefore may be stated as a fact, that one cause of retardation, stagnation of the blood in an inflamed part, is owing to the weak and inelastic condition of the capillaries, such as exists in atonic congestion.

The continual stimulation of a part is followed sometimes by congestion rather than inflammation. It is thought that this fact is owing to the exhaustion of the tensive power of the small vessels, which leaves them in a weakened and enfeebled condition.

In other words they lose their contractility. But it is also true that many of the features of inflammation are caused by the changes in the blood within the inflamed vessels. Dr. John Hunter's opinion was that coagulation of blood in inflamed vessels was caused by the adhesion of fibrin to their interior. Gendrin was of the same opinion. Dr. Marshall Hall believed that the obstruction was due to the adhesion of blood globules to the walls of the vessels. Poiseulle speaks of a motionless layer of serum between the moving blood and the walls of the vessels themselves. Williams and Tozabee found by experiment that it was not the red particles but the white corpuscles or colourless globules, called by Müller *lymph globules*, that rolled along the sides of the vessels and finally became adherent.—*Ohio State Journal*.

PIECES OF PORCELAIN FOR FILLING CAVITIES OF DECAY.

By MARSHALL H. WEBB.

For a number of years a few operators have occasionally inserted a piece of carefully selected porcelain in a large cavity within the labial wall of an incisor or a cuspid tooth with oxychloride of zinc, and afterwards filled in foil between

the porcelain and the margin of enamel, thus presenting only a narrow line of gold to view.

During and since the year 1870, when he was practising in Reading, Pa., Dr. F. Hickman frequently used pieces of porcelain crowns in filling large cavities of decay in the buccal and masticating surfaces of molar teeth. These pieces were selected from porcelain crowns made for other work; they were fitted accurately to the margin of the cavity to be filled, and inserted in either gutta percha or oxychloride of zinc, the material filling the interstices between the porcelain and margin of the cavity. Dr. Hickman did not build in gold between the porcelain and enamel afterwards, however, as in cavities within the labial wall of an incisor or a cuspid tooth.

Dr. E. T. Starr has recently devised various sizes and different forms of porcelain for use in filling cavities, and these pieces of porcelain are so well shaped that besides slight bevelling of the edges, but little trimming is necessary to prepare them for insertion. Those with a platinum pin inserted in each can rarely be used excepting in pulpless molars.

In inserting pieces of porcelain, the shade and shape of the piece to be used in each case must first be carefully selected, after which the rubber-dam ought to be applied, the cavity prepared, the porcelain fitted and inserted. If the piece is to be placed in a cavity in the masticating surface of a molar tooth, the entire cavity ought to be filled with oxychloride or oxyphosphate of zinc, and while the cement is yet sufficiently plastic the porcelain must be pressed to place and the surplus material that escapes should be trimmed away at once, thus exposing the margins to view. After allowing ample time for the cement to harden, the rubber-dam should be removed and the porcelain trimmed down with corundum-wheels till proper occlusion of the teeth is had.

Oxychloride and oxyphosphate of zinc, as well as gutta percha, wear away some, but when only a narrow line of the material is left between the enamel and the porcelain attrition does not impair the operation, and further decay is not likely to take place.

Gutta percha ought to be used in the filling of cavities within the buccal walls of molar teeth, and especially where the cavity to be filled extends to or under the margin of the gum, because this material is not dissolved and washed away by the fluids of the mouth. After the piece of porcelain has been properly fitted it should be heated just enough to soften the gutta percha previously placed in the cavity and allow of its being pressed at once to place. After trimming away the gutta percha to the margin of enamel and porcelain, first with a warm, flattened burnisher, and then with chloroform applied on pellets of Japanese bibulous paper, the operation is completed and the rubber-dam should be removed. Even though the surface of the porcelain be on a line with that of the enamel surrounding it, the gloss left from the burning of the piece should then be removed with Hindostan stones, because a less artificial, and therefore a finer, appearance in the mouth is presented.

Previous to filling with gutta percha, or with any material other than oxychloride or oxyphosphate of zinc, one of these cements ought to be placed in the bottom of all deep cavities as a non-conductor of the currents incited by heat and cold in the dentinal fibres, that the pulp so nearly exposed may be better protected than by gutta percha, or that, after a metallic substance is inserted, thermal changes may not produce shock.

Pieces of porcelain cannot easily be inserted in any but what may be called large-medium, or in extensive cavities of decay, and it is scarcely necessary to try inserting them in other than these, because it usually requires comparatively little time to fill small cavities in the masticating and buccal surfaces of molars and bicuspid well with gold by the aid of the electro-magnetic mallet.

When cavities are carefully prepared and the pieces of porcelain are properly fitted, inserted, and finished, these operations not only present a finer appearance, and protect the margins of enamel better than those made of amalgam, but they can be made more durable than fillings of any plastic substance or any known material excepting gold.—

Dental Cosmos.

Dental News.

GENERAL MEDICAL COUNCIL.

THE Thirty-third Session of the General Medical Council was opened on Tuesday last at two o'clock at the Council Chamber in Oxford Street.

The PRESIDENT delivered the inaugural address, the only portion of which that especially interests our profession was:

"The legal points arising out of the vexed question of who are *bonâ fide* Dentists, and what names ought to have been or ought to be removed from the Dentists' Register, cannot be left unnoticed."

After some preliminary matters the following Dental business was brought under the consideration of the Council:

The REGISTRAR read the report of the Dental Committee, consisting of Drs. Acland, Pitman, Quain, Haldane, and Aquillar Smith:

"The Dental Committee have considered the case of Mr. Thomas John Molloy, a registered Dentist, referred to them by the Executive Committee to ascertain the facts, and have taken evidence.

"The Committee find that Mr. Thomas John Molloy was registered on the 22nd day of November, 1878, as 'in practice before July 22nd, 1878;' and that in 1879 the said Thomas John Molloy was registered, with the additional qualification of 'Licentiate in Dentistry of the Faculty of Physicians and Surgeons of Glasgow,' by virtue of a diploma then produced, and bearing date the 27th day of August, 1879.

"The Committee further find that in pursuance of the power vested in the Faculty of Physicians and Surgeons of Glasgow, the President and Council of the said Faculty have, at a meeting held the 5th day of June, 1882, removed the name of the said Thomas John Molloy from the list of Dental Licentiates of the said Faculty.

"The Dental Committee further find that in consequence of the said order, the said Thomas John Molloy has ceased to be a Licentiate of the Faculty of Physicians and Surgeons of Glasgow.

"The Dental Committee having considered the case of Mr. Valleck Cartwright Mallan, a registered Dentist,

referred to them by the Executive Committee to ascertain the facts and take evidence, find that Mr. Valleck Cartwright Mallan has been carrying on the practice of a Dentist in his own name at 173, Praed Street, and at 64, High Street, Notting Hill; at 94, Praed Street, as Charles Smith, and at 106, Edgware Road, as C. Valleck.

"Also that the said Mr. V. C. Mallan attended before the Committee in person, admitted the above facts, and expressed his readiness to submit to any suggestion which the Council should make.

"With reference to the cases of John Thomas Lambert and Joseph Walker, referred back to them by the General Council, the Committee find that Mr. John Thomas Lambert and Mr. Joseph Walker have now answered the communications addressed to them, and that they are in the same position as regards qualification as the other persons who are on the Dentists' Register, and who answered in due time the letters sent them by the Council."

The PRESIDENT then reminded the Council that in discussing cases involving penal measures strangers would be requested to withdraw during their deliberation.

The SOLICITOR (Mr. Farrer) said the first case was that of Mr. Thomas John Molloy. It had been found that the Faculty of Physicians and Surgeons of Glasgow had erased his name from the list of Dental Licentiates of that Faculty. That fact had been submitted to the Council, and it was presumed in consequence of his having been removed from the Faculty of Physicians and Surgeons of Glasgow that qualification would be struck out from the Register under the orders of the Council. He would remain on the Register, but that particular qualification, as it had already ceased to exist at Glasgow, would cease to appear on the Register.

Dr. PITMAN.—We had a similar case to this in the year 1880, when it was resolved that as by the Report of the Dental Committee it appears that Mr. — has ceased to be a Licentiate in Dentistry by the Faculty of —, his qualification as having been such Licentiate be erased from the Dentists' Register, and that the Registrar be ordered to erase such qualification from the Register accordingly. I therefore move a resolution in the same terms with regard to the case now before the Council.

The motion was seconded and carried unanimously.

The PRESIDENT.—The Council will understand that the resolution does not have the effect of erasing Mr. Molloy's name from the Register altogether because he was in practice before July, 1878.

SIR WM. GULL inquired whether the reasons of the Glasgow Faculty of Physicians and Surgeons for removing that gentleman's name could be given.

Dr. QUAIN said the question might be answered as a matter of curiosity, but all the Council had to deal with was the simple fact that Mr. Molloy had no longer the qualification, and therefore his name could no longer remain on the Register with such qualification attached to it. The Council was now simply asked to take off the Register a thing which did not exist.

Dr. ORR in answering the question on behalf of the Faculty of the College of Physicians and Surgeons of Glasgow, said he was happy to state that it was not on account of any moral guilt that this gentleman had been deprived of his qualification, but merely because he insisted upon advertising in the most open and barefaced manner in spite of numerous applications to him to desist from the practice. They had written him asking him to desist, and he wrote back saying he was almost sorry that he had ever accepted the qualification for he could not get his living unless he was allowed to continue advertising. That was the simple reason for the step which had been taken. He should like to know whether Mr. Molloy's name could not be erased altogether from the Register—whether the conduct he had been guilty of was not sufficient to warrant his name being erased as a registered practitioner altogether.

Mr. FARRER said they would have to take evidence upon that point before they could erase a practitioner's name altogether. All they were dealing with was the letter of the Secretary of the Faculty of Physicians and Surgeons of Glasgow, which stated that that body had removed his name. It might be a very proper subject of inquiry as to whether there were sufficient reasons for removing Mr. Molloy's name altogether from the Register, but at the present moment what was before them was the particular qualification. What subsequent step they might take would be for them to decide upon. The 2nd Subsection of the 11th Section of the Dentists Act of 1878, ran as follows:—"The Dentists' Register shall contain the said lists made out alphabetically according to the surnames, and shall state the full names and addresses of the person, with the description and date of qualifications in respect of which they are registered." Now Mr. Molloy had ceased to hold the qualification, and their Register would be incorrect if they did not alter it in accordance to his present position.

Mr. MACNAMARA said he did not think they could touch the man inasmuch as he had been in practice previous to the

passing of the Act, unless he had been guilty of felony, misdemeanour, or any infamous or disgraceful conduct in professional respect, and they could scarcely class advertising under any of those heads.

Professor HUMPHREY said that the words of the Act merely required that the Register should state the description and date of the qualifications in respect of which the persons were registered, and whether they subsequently lost those qualifications or not, the Register would be correct in stating that they were registered with those qualifications.

The PRESIDENT reminded the Council that the resolution had already been carried for the erasure of the qualification from the Register, but that did not raise the question of removing his name from the Register, as he was in practice at the time of the passing of the Act. If there were any motion for removing his name entirely from the Register, he would suggest that the same course be adopted as was followed in the case of Mr. Hammond, namely, that it be referred back to the Dental Committee to inquire further into the facts of the case.

Dr. LYONS, M.P., pointed out that under Section 15 the Council was bound to do so. The General Council shall for the purpose of exercising in any case the powers of erasing from, or restoring to, the Dentists' Register the name of a person or an entry, ascertain the facts of such case by a Committee of their own body, not exceeding five in number, of whom the quorum shall be not less than three, and a report of the Committee shall be conclusive as to the facts for the purpose of the exercise of the said powers by the General Council.

The PRESIDENT said that was so as far as that particular qualification was concerned, but Mr. Molloy's name would still remain on the Register because he was in practice before the passing of the Act. If any further steps were taken, he would suggest that it be referred back to the Dental Committee to report on a future occasion whether or not on the facts of the case his name should be removed.

Dr. WATSON said it appeared to him that the matter would come under Clause 4.

Dr. ORR said he was quite satisfied from the discussion and from what he knew of the facts of the case, that there were not sufficient grounds to attempt to remove the name entirely from the Register.

Dr. QUAIN said the matter was really not so complicated as it might appear. Their duty was to keep the Register correct. It was stated in the Register that such and such a person was possessed of such and such qualifications, and

they were officially informed that he did not now possess them, and it was therefore their duty to correct the Register accordingly.

The PRESIDENT said the conversation was not strictly regular, because it had been already decided that the Register should be corrected, as it was in the case of Mr. —, by removing the qualification. A further question had been raised whether that was all that was to be done. He understood that it was not now proposed to do anything else unless the matter were brought before them again, in which case it would have to be referred to the Dental Committee for a further report as to the facts of the case.

Mr. FARRER.—The next case is that of Mr. Valleck Cartwright Mallan, who was also a Dentist before the Dentists Act was passed. He has admitted that he carried on business at four different places, at 173, Praed Street, and 64, High Street, Notting Hill, in his own name; at 94, Praed Street, as Charles Smith, the name of a late partner of his as we are told; and at 106, Edgware Road, under the name of C. Valleck, which is part of his own name. He submits to the Council his willingness to do anything that they may think right in the matter. The Dental Committee had Mr. Mallan before them, and I think the opinion of the Committee was that he was a straightforward man, who was telling the truth; and if he has committed, as I suppose he has, an act of unprofessional conduct, he appeared to be willing to atone for it; and it was not so very bad inasmuch as this conduct had been initiated before the passing of the Act. I should say that he submitted to his own name being put up at once at all those places of business, and to conduct his business in future in his own name if you think fit.

The REGISTRAR, at the request of Dr. Pitman, then read the following letter from Mr. Mallan :

“173, Praed Street, Paddington ;
“June 6th, 1882.

“DENTISTS ACT, 1878.

“SIR,—A summons was issued on the 22nd May against Charles Smith, of 94, Praed Street, by the Medical Alliance Association, for infringing Sec. 3 of the above Act. I enclose a copy of summons. The summons was heard before Mr. Lushington on the 31st May last. He adjourned it for four weeks, so that your Council might be communicated with, to see whether it was considered that I had been guilty of ‘infamous or disgraceful conduct in a professional respect’ in carrying on business under another name, and so liable to have my name erased from the Register.

"The facts are these:—I carry on my business at four different places—at 173, Praed Street, in my own name; at 94, Praed Street, as Charles Smith; at 106, Edgware Road, as C. Valleck; 64, High Street, Notting Hill, in my own name. The business at 94, Praed Street, was commenced in April, 1876, the house being then No. 37, Praed Street, and the name of Charles Smith was used, he being then my assistant, and taking the management and an interest in this particular shop. I registered myself under the Dentists Act as of 173, Praed Street, where I use my own name, and did not state any other addresses. I find it is not the custom in registering to give more than one address.

"I have carried on my business without interruption up to the present time.

"At 94, Praed Street, I have an assistant, Mr. Edwin James Hancock; at 106, Edgware Road, Mr. Bertrandi Davies; both of whom are duly-registered practitioners, as you will find. At Notting Hill Gate I attend myself by appointment.

"My cousin, Mr. Lionel Davis, obtained leave from your Council on February 9th last to proceed against 'Charles Smith' and 'C. Valleck,' under Section 3 of the Act, but he never instituted any proceedings. Mr. Davis is a trade rival of mine, both in Praed Street and in the Edgware Road, and he perfectly well knew that 'Charles Smith' and 'C. Valleck' were names I carry on business in; and I believe that his application was made for the sole purpose of damaging me in my businesses, and was not *bonâ fide*. The fact of the leave being given was published in the 'Chemist and Druggist' and in the 'British Journal of Dental Science.'

"The British Dental Association were made aware of the fact of my carrying on the businesses in the two names, and no remark was made by them. I enclose a copy of a letter to them and their Secretary's reply.

"The Medical Alliance Association I know nothing of, but I believe they are set in motion by Mr. Davis. I know that he was in Court on the hearing of the summons, and was in conversation with the prosecuting solicitor.

"I have been in business as a Dentist for thirteen years, as reference to Messrs. Ash's book will show.

"I have no desire to carry on my business in a way which your Council may consider unprofessional, and I write to say that I am quite prepared to accept any suggestion which your Council may wish to make.

"I should like to be informed whether leave was given to the Association to prosecute. I refer you to my solicitor's correspondence with you thereon.

"I do not for one moment admit that I have been guilty of any unprofessional conduct, or that what has taken place is within the Act. No hint or suggestion before that made by the magistrate was ever made either by the British Dental Society, or by any other person, that carrying on business in different names was unprofessional. I think it right to call the attention of the Council to the fact that carrying on the business of a Dentist by Dentists in other than their own names is of frequent occurrence in London.

"Trusting you will bring this letter at once before your Council,

"I am, Sir, yours obediently,

"VALLECK CARTWRIGHT MALLAN."

"W. J. C. MILLAR, Esq.,

"Registrar of the General Medical Council."

The PRESIDENT.—I think it only remains for me to ask whether the Council desire to hear any further facts in this case. If they do not it will be my duty to request strangers to withdraw while the Council deliberates upon the case. I may also state that Mr. Mallan is in attendance should it be deemed desirable for him to appear before us.

The strangers withdrew, and the Council deliberated for some time, when it was moved by Dr. QUAIN, seconded by Dr. AQUILLA SMITH:—"That the Council, having considered the Report of the Dental Committee on the facts of the case of Mr. V. C. Mallan, are of opinion that the practice brought under the notice of the Council is one which is inconsistent with the law and with professional propriety; but the Council, if it receive the assurance of Mr. Mallan that the practice shall be discontinued, will not think it necessary to take further steps in the present case."

Amendment moved by Dr. LYONS, and seconded by Sir WM. GULL:—"That this Council direct Mr. Mallan to remove from his place of practice any name but his own or that of a registered Dentist in partnership with him."

The amendment was lost, and the original motion was then put to the vote and agreed to.

On the readmission of the public,

The PRESIDENT, having previously called in Mr. Mallan, said:—"The Council have paid great attention to the circumstances of your case. They have received a report from the Dental Committee, which is constituted under the Dental Act, and that report sets forth that you have been carrying on practice in your own name at 173, Praed Street, and at 64, High Street, Notting Hill; at 94, Praed Street, as Charles Smith, and at 106, Edgware Road, as C. Valleck. They further state, "Mr. Mallan attended before the Com-

mittee in person, admitted the above facts, and expressed his readiness to submit to any suggestion which the Council should make." The Council have requested me to ask you if you will give me now an assurance that the practices in question shall be discontinued.

Mr. MALLAN.—One practice since the legal proceedings were commenced has been discontinued, namely, the practice under the name of Valleck. I have offered to substitute the name of Valleck Mallan on a brass plate on the door, which is the name under which I am duly registered. At 94, Praed Street, where I have been in practice under the name of Smith, I have no objection, if it will be any satisfaction to the Council, to place my own name in conjunction with that of Smith. The Council will understand, of course, that I having been carrying on business there since 1876; I have a valuable connection attached to the establishment under the name of Charles Smith, and I would ask to be allowed to continue that name so that my patients may know that it is the same practice. I will, however, in the course of time remove the name Charles Smith entirely from my establishment, and in its place I will put my own name. The name Charles Smith is, of course, valuable to me on account of its having been up so long, and I have a good connection attached to it. It is more important to me because a rival in business has recently started within a few doors of me who trades under the same title as myself, namely, that of Working Dentist—a title I took because of working for the profession and also for the working classes. Therefore, out of fairness I ask this small indulgence that you will permit me to retain the name of Smith for a time in conjunction with that of Mallan.

A MEMBER OF THE COUNCIL.—Is Smith alive?

Mr. MALLAN.—In answer to that gentleman's observation I have no objection to put on my door "late Smith." In fact I will do anything which is right or fair, but of course after one has been trading under a name for some time it becomes very valuable. A rival practitioner, who is a cousin of mine (so that it is not a case of let brotherly love continue—or cousinly love) was the instigator of these proceedings, and it would be only a satisfaction to him to see me compelled to take down that name so that patients might walk into his establishment instead of mine. In taking the name of Smith the Council will be aware that I am not trading upon anybody's reputation. I have not taken the name of an eminent practitioner like Mr. Tomes. I have simply taken a common-place name, and a name I had some right to take because there was a young man in my employ of that

name. Therefore in reality I am practising under the name of the original founder of that business.

A MEMBER OF THE COUNCIL.—Is Smith dead.

Mr. MALLAN.—I cannot answer that question.

The PRESIDENT.—The allegation is that Mr. Mallan trades under these names, and the decision of the Council is after he has expressed his readiness to submit to any suggestion by the Council, that the practice which has been complained of shall be discontinued. I understand the assurance Mr. Mallan has given me—and which he gave at once—is that he will add his own name to the existing names at once, and that he will discontinue the name of Smith and others after a certain time. Is that your assurance—that you will discontinue all the names but your own?

Mr. MALLAN.—I am only practising at present under one name other than my own, and that is at an establishment where I am carrying on the business of my predecessor. I am doing nothing more than plenty of other people do, whom I could mention.

The PRESIDENT.—Do I understand that you will discontinue the use of any name not your own.

Mr. MALLAN.—I will give you my word that I will discontinue the use of any name except my own name after the lapse of a certain time. For a certain time I wish to continue to use the name of Smith.

The PRESIDENT.—What time?

Mr. MALLAN.—I will put up immediately "late Smith."

The PRESIDENT.—And then afterwards?

Mr. MALLAN.—After that I will place my own name alone. It is very hard that I should have established a business in 1876 and should be obliged to take the name under which it was established from the public at once. I have a competent and registered assistant managing my business there, and I may mention that it is quite a distinct practice from my own.

The room was again cleared, and on the re-admission of the public,

The PRESIDENT said that it may be convenient that it should be known that the General Medical Council having received Mr. Mallan's assurance that the practice complained of shall be discontinued, do not think it necessary to take further steps in this case, and I now move that the Registrar be directed to furnish a copy of the Council's resolution to that effect to Mr. Mallan.

The motion was put and carried unanimously, and the Council adjourned.

WESTERN BRANCH OF THE BRITISH DENTAL ASSOCIATION.

THE Annual General Meeting of this Association will be held at Cheltenham on August 5th prox., R. Rogers, Esq., President in the chair. Members who intend to read papers or casual communications, or to exhibit improved Dental appliances, are requested to send notice to the Hon. Local Sec., Dr. Poale, 1, Royal Crescent, Cheltenham.—W. V. MOORE, Hon. Sec., 15, Princess Square, Plymouth.

WE understand that a new branch of the British Dental Association has been inaugurated, with Edinburgh as its headquarters, and from the names of those gentlemen who are at present taking an active part in it, we believe it is likely to be one of the most important of its branches.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

At the June Examination of the Royal College of Surgeons in Ireland, Messrs. C. Carter, J. Lamplough, Liverpool, and J. Prayer obtained the diploma of Licentiate in Dental Surgery.

The following were the questions asked at the Dental Surgery Examinations of the above College in June, 1882.

The candidate was required to write an answer to only ONE of the questions on each paper.

Examiner—MR. HENRY G. SHERLOCK.

1. Inflammation causing death of pulp, without caries, in an incisor tooth—give its cause and treatment.
2. Fistula in lower jaw—causes and treatment.

Examiner—MR. B. WILLS RICHARDSON.

1. What part does diastase perform in the process of digestion?
2. How is the great sensitiveness of dentine explained?

Examiner—DR. EDWARD A. STOKER.

1. Describe the antrum of Highmore, giving boundaries, relation to teeth, and exact position of principal opening.

2. Describe fangs and cusps of second upper molar. With what teeth is it in contact when mouth is closed?

Examiner—MR. E. STAMER O'GRADY.

1. In what position may salivary calculi be found? What are such formations, and state how you would treat the trouble?

2. What is meant by the expression "salivary fistula"? Where may the condition be found, and how is it best treated?

Examiner—MR. F. ST. B. TAYLOR.

1. What would be the consequences of pivoting a tooth with brass, or any other base metal?

2. Mention the different materials used in taking impressions of the mouth, and the method of application of each.

Examiner—MR. JOHN H. LONGFORD.

1. What would be your treatment in a case in which two or three permanent front teeth have been knocked out by accident?

2. What is borax, and its use in mechanical Dentistry?

APPOINTMENT.

MR. W. F. CORNELIUS has been appointed assistant house-surgeon to the Dental Hospital of London.

DENTAL HOSPITAL OF LONDON MEDICAL SCHOOL.

THE distribution of prizes to the successful students will take place at Willis's Rooms, King Street, St. James's, London, on the 6th inst., at 6 p.m. precisely. Mr. Edwin Saunders, F.R.C.S., President of the Metropolitan Branch of the British Medical Association, will preside.

THE EDINBURGH SCHOOL PRIZE FUND.

KINDLY permit me to acknowledge the receipt of One Guinea from Mr. Lucas, L.D.S. Ed. (Blackheath), and Half

a Guinea from "J. P." Also to say, additional sums will be gladly received by Mr. MacGregor, 20, Queen Street, Edinburgh.

I am, &c.,

WALTER WHITEHOUSE,

Hon. Sec.

READING PROVIDENT DISPENSARY—REPORT FOR 1881.

THE number of patients entitled to attendance at a small charge during the year 1881 was 13,881, being about one fourth of the total population of Reading. The Dental cases attended for that number of patients has been 553, being cases of extraction and advice, &c., only. No extra charge is made for Dental attendance. I particularly mention this, in consequence of some correspondence which reached me when I presented a former report.

I am, &c., GEO. LYDDON, L.D.S. Eng.,

Hon. Dentist.

Correspondence.

[We do not hold ourselves responsible for the opinions expressed by our Correspondents.]

THE NEW METHOD OF DUPLICATING MODELS.

To the Editor of the 'British Journal of Dental Science.'

SIR,—I shall be obliged if you will permit me to show by an extract from the letter accompanying the specimen of the elastic composition sent to you, I did not claim invention, but improvement, in the material used and *practical* application. "In sending some dental plates, made by electrotyping for the inspection of the Odonto-Chirurgical Society some two years since, I also sent a model, duplicated with elastic composition, made from the ordinary recipes contained in works on electrotyping; but the elaborate preparation necessary to prevent the composition sticking to the model, and slight shrinkage from evaporation, caused me to abandon its use. The new composition I am now using has been tested some months, and is quite free from shrinkage, containing no water."

The practical application is this, the whole process can be arranged in two minutes. The directions advise a thin coating of oil on the model, but that is not absolutely necessary if the model is thoroughly stearined. The presence of a little oil in the composition, and the use of alum with the plaster, obviates the necessity of applying anything to the surface of the composition before casting the duplicates. As I could not persuade even my friends to go to the trouble of preparing the apparatus from my directions, I thought it would be appreciated if I did so; I am pleased to find that it is.

I am, &c.,

WALTER WHITEHOUSE.

50, Parliament Street, S.W.

To the Editor of the 'British Journal of Dental Science.'

SIR,—I wish to give my testimony in favour of Mr. Walter Whitehouse's elastic material for duplicating models, especially undercut ones. It is simple and certain; I bought one directly I saw your notice of it in journal, and it answers admirably; I always keep my original model now, and vulcanise on a duplicate taken with the elastic composition, which saves me a great deal of trouble.—I am, &c.,

GEO. BEAVIS.

Newport, Mon., Jan. 21st, 1882.

WISCONSIN DENTAL COLLEGE.

To the Editor of the 'British Journal of Dental Science.'

SIR,—Being one of the fortunates or rather unfortunates chosen by the Faculty of the Wisconsin Dental College as being worthy of the honorary degree of D.D.S., providing the necessary fee was remitted either by P.O.O., or Bank Draft. Immediately on receipt of their circular I wrote asking a Dental friend in America if the honour was worth the paper it was printed on. To my note he says:

"Yours of the 27th ult. just this moment received. In reply would say that the Wisconsin Dental College is a consummate fraud. In fact it has no existence now, as its charter has been recalled by State authority. Its irregular and disgraceful proceedings have been published long ago, and I am surprised that they are now trying to practise their frauds on European Dentists. I would be glad if you would send me the letter, so that I can have it published in every Dental Journal in America."

Trusting this may not be even now too late to prevent some brother practitioner from being taken in.

I am, &c.,

L.D.S., Glas.

June, 1882.

To Correspondents.

1. Communications intended for insertion in the ensuing number must be forwarded to the Editor, at the Office, 11, New Burlington Street, London, W. by the 8th and 23rd of the month, and must be duly authenticated by the name and address of the writer.
2. We cannot undertake to return communications unless the necessary postage stamps are forwarded.
3. It is earnestly requested of our correspondents that their communications be written on one side of the sheet only; and we also beg to call particular attention to the importance of a carefully-penned signature and address. All communications relative to subscriptions and advertisements are to be addressed to the Publishers, Messrs. J. and A. Churchill, 11, New Burlington Street, London, W.
5. The Journal will be supplied direct from the office on PREPAYMENT of subscriptions as under :

Twelve Months (post free)	14s. 0d.
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 Post-office Orders to be made payable at the Regent Street Office, to J. and A. Churchill, 11, New Burlington Street, W. A single number sent on receipt of seven (penny) stamps.

ANSWERS TO CORRESPONDENTS.

- T. H. COLEMAN.—An interesting case in its results, but, without the minute surgical notes, of no special importance for publication. The subsequent mechanical contrivance is the usual method and most effective as a rule.

Communications have been received from Messrs. J. J. Musgrave, C. F. Sutton, W. Whitehouse, G. Bevis, W. & J. Jamieson, A. B. Verrier, C. L. Sutton, G. Lydden, A. O. Best, R. Neale, C. H. Riches, A. Polsher, The Dean of the Medical School of the Dental Hospital of London, J. S. Amore, F. D. Walker, "L.D.S. Glas.," T. H. Coleman, G. Morrison.

BOOKS AND PAPERS RECEIVED.

'L'Odontologie.' 'Le Progrès Dentaire.' 'Pharmaceutical Journal.' 'Chemist and Druggist.' 'Ohio State Journal.' 'Die Zahntechnische Reform.' 'Lancet.' 'British Medical Journal.' 'Medical Times and Gazette.' 'Journal of British Dental Association.' 'El Progreso Dental.' 'The Cosmos.' 'The Southern Dental Journal.' 'Medical Digest.' 'Twenty-first Transactions of the American Dental Association.' Dr. T. Barr's 'Ear Disease.' 'Review Odontologique,' and 'Annual Announcement of the Wisconsin Dental College.'

NOTICE.—We desire that it may be clearly understood that our pages are open to all for free expression of their views on matters connected with our profession. We only ask for terseness of expression and MODERATION IN TONE.

When otherwise unobjectionable, difference of political or other opinion will never be regarded by the Editor as a disqualification for the admission of any communication to the pages of the BRITISH JOURNAL OF DENTAL SCIENCE.

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VOL. XXV.

ADDRESS DELIVERED AT THE DISTRIBUTION OF
PRIZES TO THE STUDENTS OF THE DENTAL
HOSPITAL OF LONDON MEDICAL SCHOOL, ON
THURSDAY, JULY 6TH.

By EDWIN SAUNDERS, F.R.C.S.,

PRESIDENT OF THE METROPOLITAN BRANCH OF THE BRITISH MEDICAL
ASSOCIATION.

LADIES AND GENTLEMEN,—Occasions such as that at which we have just had the pleasure of assisting possess an interest not only for those who are connected by ties of consanguinity or of friendship with the alumni who have achieved distinction, but for all who are conscious of broad human sympathies and aspirations after intellectual progress. It is not only that we experience a pleasurable emotion on seeing the wreath placed on the brow of the intellectual athlete—the emotion which legitimately waits on success—but we feel constrained to regard with complacency the results of the emulation called forth in the struggle for supremacy, in adding strength to the moral fibre, and in carrying still higher the standard of professional merit. The mental strain and conflict, the waste and repair of brain tissue in the strife, even if at length the goal should not be reached, will be found to yield a rich harvest in bracing the mind, in awakening and stimulating the perceptive faculties, in strengthening the memory and the power of assimilating knowledge, many-sided and various, and on that account most valuable to the specialist. For, without sympathising with those who set their faces against special training, special

institutions, and special practice (with a virulence proportioned to their want of information as to what is comprehended under the head of such special knowledge), and without admitting that the specialist is necessarily a man of one idea or of limited intellectual range, there can be no doubt that it is desirable that he should be from time to time refreshed by excursions outside the sphere of his own speciality. The perpetual recurrence of a similar class of cases, with the routine treatment involved, affording few opportunities of novel or original observation, cannot but have a benumbing and enervating effect on the mind. And at no period of his subsequent career will it be so easy for the practitioner to throw himself quickly and entirely into other lines of thought. For, with the lapse of time and the environment of daily habit and the exigencies of practice, he will find it increasingly difficult to disengage himself from the deepening groove of his own speciality. Thus there is a real and personal benefit outside and beyond the tangible symbol of success, not to be enjoyed exclusively by the victor, but which is common, though possibly not in the same degree, to him who fails and to him who wins the prize. To both alike come health and renewed mental vigour from the struggle and heat of the chase; and, so far from the time being lost, which was expended in an outwardly unsuccessful contest, it will be found that a measurable and substantial good has been gained. Thus in this case, as in many other instances in human affairs, the law of compensation becomes manifest; and another illustration is afforded of the truth of the axiom, that no good deed is lost, and that no honest work is finally and altogether barren of good result. This, I think it will be admitted, is a very real and solid ground of consolation for those who are not included in the roll of prize-winners, inasmuch as they hold in inalienable possession the substance of solid acquisition, though they are unable to point to the outward and visible sign of success. To the holders of the much-coveted and well-earned prizes we can only offer our hearty congratulations and good wishes, not to say confident hopes, of a career in harmony with this brilliant promise. Nor can we fail to be struck

with the hearty plaudits ungrudgingly given by competitors who, in a thoroughly English spirit, thus unselfishly give vent to their generous enthusiasm. And now, in accordance with established precedent, it should be my duty to exhort the prize-holders not to remain satisfied with the position to which they have attained, but, far from feeling content with what has been accomplished, to persevere and strive for further and greater achievement. And then I should turn to the uncrowned and bid them not to be discouraged, but to resolve with stern determination to turn defeat into a glorious victory by renewed application and diligence. But, gentlemen, I forbear, and I fancy I hear you say: "All this we know and have heard before." Be it so, but I will make one reflection; it is this: that a knowledge of human nature and of mental idiosyncrasy would make us hesitate to accept failure at an examination as an unerring proof of incapacity or the converse, as an unfailing guarantee of professional pre-eminence. A highly nervous temperament, a temporary obscuration of memory, or a passing ailment, or similar unfavorable physical condition occurring at the critical time of the ordeal of examination, may prevent an otherwise well-prepared candidate from doing justice to himself in bringing out the full measure of his attainments.

The department of surgical practice of which you have made choice, and to which you have resolved to devote your life-long energies, with a success and distinction sufficiently predicated by the proceedings which have just taken place in this room, is at once exacting and important. It is exacting from the time and fatigue demanded by the operations which it embraces, still further complicated and impeded in no inconsiderable proportion of cases by the sensitive condition of the structures to be operated upon, rendering the proceedings alike irksome both to operator and patient. Although here again the law of compensation comes to our aid, as in the great majority of cases where no such morbid sensibility is met with, the patient experiences a lively sense of gratitude for relief from suffering, and for the preservation of a valuable organ. Again, it is exacting in the amount of patience and forbearance required in

assuaging the unreasonable apprehensions or expectations, as to the time and manipulation necessary on the part of some patients. From all which it will be seen that a courteous demeanour, a kind manner, inexhaustible patience, and dextrous manipulation are indispensable to the highest success, more especially if the practice should lie amongst highly-born, delicately-nurtured, and sensitively-organised natures. It is important no less on account of the almost universality of the class of ailments of which it takes cognisance, than of the amount of suffering to which they give rise. It is a well-worn commonplace, that no physical ailment obtains less sympathy, and yet there is none more intolerable while it lasts, or is, in its effects, more prostrating and intellectually more absolutely paralysing than odontalgia. As was once well observed by an illustrious ady, who is conspicuously in sympathy with suffering or bereavement among persons of all sorts and conditions: "Yours is the most useful of all branches of surgery, for while a certain proportion of mankind may require the services of the oculist or of the aurist, all, almost without exception, have need sooner later of the Dentist."

In addition to the anatomical and surgical teaching, which is a pre-requisite common to all branches of the healing art, a certain personal aptitude is necessary to the successful pursuit of Dental Surgery. And foremost among the indispensable requisites of the Dental Surgeon is the possession of a strong yet gentle hand. It is well known that it has long been found convenient to recognise two great divisions of the healing art—medicine and surgery. The former takes charge of the more deeply seated structures or organs out of the range of vision, and whose condition is to be inferred chiefly by symptoms, a species of knowledge which is known as diagnosis. The latter comprehends all those parts of the organism which can be reached and operated upon by the hand or by the instruments which it calls to its aid, under the appropriate name of surgery, obviously a contraction of the old *chirurgia* or handwork. In all this class of cases the hand plays a very important part, but in none is it so largely and constantly employed

as in the speciality with which we are concerned. It is obviously, therefore, of the first importance that the hand should be well-formed, with fingers well endowed with nerve power and sensibility, so as to respond to the will of the operator with quickness, with accuracy, and with delicacy of touch, so that the patient may experience a feeling of confidence that while there is an ample reserve of power, there will be no unnecessary violence. If it should seem to some that this is a comparatively unimportant detail, and that I insist with undue emphasis on this matter of tenderness of manipulation, I would remind them that we are sometimes too apt to forget, in the ardour of doing the best for the case, that we are working on living sentient structure, and should therefore be extremely careful not to omit anything which may diminish the necessary discomfort. There are few, indeed, who would fail to appreciate the careful avoidance of unnecessary pain; and fewer still who would not be deterred from again seeking timely aid, by the recollection of a protracted operation, conducted in a brusque unsympathising manner.

And here we may not withhold our grateful tribute for that inestimable boon to humanity, anæsthesia; that "sweet oblivious antidote" which, by harmlessly inducing temporary sleep of sufficient intensity to render the patient insensible to pain, robs ordinary operations of their sting and horror, and renders extraordinary, but sometimes vitally necessary, surgical proceedings possible which were formerly almost prohibited on account of the shock to the system by which they were unavoidably accompanied. And it must never be forgotten that this priceless gift, this magical charm, by which what was hideous and revolting in the surgery of the past, or pre-anæsthetic period, has been transformed into the mild beneficence of an angel of mercy, had its origin in the speciality of Dental Surgery. The crucial experiment which first demonstrated to the world for all after time the feasibility of inducing at will temporary insensibility to pain was the removal of a tooth. An operation which, simple as it may appear, is probably attended with as much pain while it lasts as any of the higher operations of

surgery. Indeed, it may be questioned whether, in the case of persons of highly-sensitive organisation, the nervous system could survive the agony thus experienced, if prolonged, of this happily transient operation. It is impossible to over-estimate the great gain to humanity in the conscious avoidance of pain on the part of the operator, as well as in the interest of the patient, or of the magnitude of the addition to the sum of human happiness, both to young and old, which has resulted from this discovery; nor should any familiarity with its use ever be allowed to deaden within us our sense of its value. To how many of us have the recollections of childhood or youth been embittered by those hated and dreaded periodical visits to the Dentist, the impressions of which have not seldom remained deeply graven in our hearts through a long life! This realisation of the dream of the poet, this realistic translation of the magician's art, in its adaptation to the daily needs of suffering humanity, has now become a matter of every-day practice, and perhaps on that account is in some danger of being undervalued. If, however, it had suddenly become revealed to us as the discovery of the archæologist among the archives of some buried city, or in an Egyptian papyrus, how intense and wide spread would be the interest it would excite, and what pæans would be raised in honour of the skill and learning of the ancients! But it was reserved for our own times, which are signalised by two grand discoveries, either of which would singly have conferred immortality on the age—anæsthetics and the antiseptic treatment of wounds. By their combined action the proceedings and principles of modern surgery have been profoundly modified, and operations of the first importance in prolonging life or in rendering life worth living, and which were formerly deprecated on account of their high mortality, are now matters of daily and accepted practice.

It might well seem superfluous to urge anything by way of justification for the existence of a special hospital and school for Dental Surgery, since the absolute necessity of making it a special branch of practice has long been recognised both in and out of the profession. To those, however,

who know something of the politics of the medical profession, it will be no secret that a Representative Committee for promoting reform in hospital management and administration has been of late drifting, under the insistence of a reactionist minority of its members, into a wholesale repudiation and ignoring of the utility and value of special institutions of the kind. That the needless subdivision of medical and surgical practice is to be deprecated and discouraged, is agreed on all hands; but that all specialities can be equally well taught at the large general hospitals, or that the support given to those institutions is so much subtracted from their income, are propositions which will not readily be admitted by impartial observers. It is simply idle and misleading to assert that the general hospitals are equal to the satisfactory discharge of all the functions of special institutions. It would be a present danger and manifest injustice to the inmates, not to say impossibility, for the general hospitals to receive cases of smallpox, fever, and infectious diseases generally; nor can they afford to encumber their wards with consumptive or other chronic forms of disease. And in our own speciality it may be fearlessly asserted that the space and light required, no less than the time and close attention necessary for operations in the present advanced state of the art, make it impossible to provide satisfactory means of instruction as a department of a general hospital. That a certain amount of knowledge on the subject, of great value to the country general practitioner, or to those whose destination is India or the Colonies, may be and is thus obtained, will not be disputed; but to contend that the student can thus become fitted to hold his own among the accomplished practitioners of the present time by such training, is simply a delusion and a snare. The attempt, then, to blot out special hospitals must be regarded as altogether a retrograde measure, neither politic nor feasible; as futile indeed as the endeavour to stem the rising tide of progress, and one in which an appreciative public will not be easily induced to concur.

And now, lest I should become tedious and should have subjected your forbearance to too great a strain, I will con-

clude what I have to say by one reflection, which is at the same time a matter of congratulation. It is that our department of practice has not been invaded by the energetic and, shall I say, the aggressive of the superior sex; at least not in this part of the world. And if I regard this as a matter of congratulation, it is from no apprehension of rivalry, and in no hostile spirit, but rather from a high sense of appreciation of all that is tender and gentle and graceful in the character of woman, which we would not willingly see sullied by contact with what, in a certain sense, is inevitably cruel and violent. Her fair hands were designed for delicate offices, and not for the amputating knife, the scalpel or the forceps. Let her exuberant philanthropy find its legitimate and appropriate sphere in supplementing the surgeon's work by the scarcely less divine work of nursing. By her comforting presence, by her low tones of encouragement and consolation, by her skilful and gentle smoothing of the pillow, by her intuitive perception of what is soothing and restful, by her woman's tact with which she knows how to gladden and brighten the sick room with bits of colour, with flowers or sweet odours, in all which she is immensely man's superior; in all these things she will be doing a far more useful work than if she could be relied upon, by doing violence to her nature, to undertake all the operations of surgery. A knowledge of anatomy and physiology may indeed stand her in good stead, by enabling her to correct errors in diet and the management of health, and to avoid some eccentricities, more or less injurious in their effects on her delicate organisation, in the prevailing fashion of draping the human figure, and such knowledge will have the advantage of imparting authority to remonstrance. She may even combine with this some knowledge of therapeutics, and may do useful work, to a certain extent, in medical treatment; but for the operations of surgery she is by nature denied both the physique and the nerve. There is indeed no lack of energy and capacity for work in the woman of the period; and the burning words of scathing reproach of our greatest living poet are no longer applicable. He may no more apostrophise her in such strain as this:

“Lady Clara Vere de Vere,
If time be heavy on your hands,
Are there no beggars at your gate?
Nor any poor about your lands?
Oh, teach the orphan boy to read,
Or teach the orphan girl to sew;
Pray Heaven for a human heart,
And let the foolish yeoman go.”

The Lady Clara Vere de Vere of the present day has gained from heaven a human heart, and in her new-born zeal not only does all this, which she was formerly rebuked for neglecting, but she burns to make the homes of the poor æsthetic, and charges herself with the task of elevating their tastes in their amusements and in all phases of their life. She no longer leads an aimless, listless, and frivolous existence, without care for aught but the amusement of the hour, and devoid of sympathy with the woes and worries and calamities which enter so largely into every-day life. But putting aside her pride of birth, and quitting for a time her ancestral halls, she shows herself terribly in earnest to ameliorate the condition of her less fortunate brethren and sisters. Nay, she does not disdain to exhibit her charms and accomplishments before the working man at the music hall, or to show her gratification at the plaudits of the Clerkenwell rough. This new zeal, this wide sympathy with the human brotherhood, this throwing down of caste and pride of ancestry, may seem inordinate and ill-regulated, but it shows at least a healthy and sound heart, and a recognition of the grand old truth which underlies our common nature, and which the same great bard has so well expressed in the ringing stanza:

“Howe’er it be, it seems to me
’Tis only noble to be good;
Kind hearts are more than coronets,
And simple faith than Norman blood.”

PARTIAL PARALYSIS OF THE LEFT FACIAL NERVE.

By J. S. AMOORE, L.D.S. Eng.

A MEDICAL student came under my treatment on May 30th with severe periosteal inflammation surrounding the stump of a right central incisor tooth. About two and a half years ago both centrals had been broken off by a fall upon the ice; one stump was removed not long after the accident, the other had been suffered to remain. On Sunday, May 28th, the stump had commenced to give him pain, and on the following Wednesday morning, the day I first saw him, he noticed lachrymation of the left side with inability to close the eyelids of the same side, while the face was drawn over towards the right hand. I extracted the stump, the removal being accompanied by a slight discharge of pus. The inflammatory symptoms subsided quite satisfactorily in two or three days, but the paralysis became still more marked. On June 2nd he asked Dr. Wyllie, of the Royal Infirmary, for whom he was "clerking," for his advice. His opinion was that the irritation of the fifth nerve had been communicated to the seventh and caused partial paralysis. He recommended a small mustard blister behind the left ear, and to take iodide of potassium internally. The paralysis lasted in all for about ten days, when the parts began to resume their normal conditions; and on his last visit (June 15th) the lachrymation had entirely disappeared, and there was no deformity noticeable except when the muscles were put on the stretch as in smiling, when the right corner of the mouth would be drawn higher than the left. If this paralysis were caused by the diseased stump it is not a little curious that the nerve of the opposite side should be the one affected. The tooth was a central therefore close to the median line, and the inflammation being very severe, it is possible that the facial nerve was affected through its peripheral branches, but it is surely more probable that the whole was a consequence of a sudden chill upon the face, such as might

easily be produced by sitting at an open window in a draught, the chill resulting ; in the first place, in violent inflammation of an already diseased stump, and in the second in partial paralysis of the seventh nerve. I am acquainted with one case very similar to the above induced by cold, in this instance no tooth was involved, and the history of the paralysis is almost identical, and the treatment and the results similar with the exception that nothing was administered internally. I might also add that it was the student's own impression that both evils were attributable to a cold.

7, Abercromby Place, Edinburgh.

THE MINUTE ANATOMY OF THE TEETH IN THE LIGHT OF THE BIOPLASSON THEORY.*

By C. HEITZMANN, New York.

(*Concluded from page 633.*)

AND now a few words concerning the minute anatomy of the teeth.

The manner of examining the tissues of the teeth in former times was like this: the tooth was allowed to dry ; it was then split into thin laminæ by means of a saw ; these were then ground down by means of a stone. In specimens thus obtained the lacunæ of the cement, the canaliculi of the dentine, necessarily looked black owing to the presence of a little air and some extraneous matter, but not the least idea could be obtained in this way as to the contents and the formations of living matter which enter largely into the construction of the tissues of the teeth. The first necessity, therefore, of research in the new direction was to devise a new method of preparing specimens for investigation, and this was found in the use of chromic acid for softening of the teeth. This proved to be a powerful reagent for extracting

* Read before the New York Odontological Society, February, 1882.

the lime-salts of the tooth and for preserving, at the same time, its soft parts. It was introduced by H. Müller, in 1868, for preparing bone. All previous observers were satisfied to examine dry bone as well as dry teeth, forgetting that such dried material could not be useful for study, as it merely showed the frame of the former tissues, and not the tissues themselves. If, on the contrary, the soft parts be preserved and retained so as to be visible with high amplifications, they are in the best possible condition for the observation of new facts concerning their structure, which is the case with the specimens prepared by the use of chromic acid. Enamel, however, never could be softened by this means. For the study of enamel we took a freshly drawn tooth, and, keeping it moist in order to preserve the soft parts, ground it thin by means of the way formerly adopted. The new facts obtained by this simple way are to-day well established.

All sensible Dentists must have been aware of life in the tooth. The simple fact that eating a sour apple would produce a certain effect upon the teeth—"setting them on edge"—has occupied the attention of thoughtful men for a long time. Some have spoken of the chemical action of the acid on the enamel, others of the conduction of the acid down to the pulp chamber; but all that was unsatisfactory. Certainly every Dentist must have observed that the living dentine is endowed with a high degree of sensibility, especially in certain places; for instance, at the boundary line between the dentine and enamel at the neck of the tooth. Many other facts, the reaction upon filling, the so-called solidification around a filling, could not be explained by the former view. Tooth was considered to be cartilage with infiltrated lime-salts in which there are canaliculi, holding central fibres, the nature of which was not known. The enamel, even in the eyes of the best observers, was thought to be a crystal, a calcareous mass epithelial in its origin. The new researches show that the tooth is pervaded by a bioplaxson reticulum in the same way as an amœba. It does not creep out of the mouth like an amœba, on account of the infiltration with lime-salts in the lifeless portion of

the tooth, *i.e.* the original liquid, which has become a solid basis-substance, while the reticulum remains unchanged, not only throughout the dentine, but also through the enamel.

We have learned, through the researches of Bödecker, that the fibres present in the canaliculi are living matter. These first had been depicted in Richard Owen's celebrated work by the draughtsman employed by him. In the picture we see the fibres, while no mention is made of them in the text. Tomes was the first to describe the fibres, and he thought they were probably nerves. This approaches our views, for we can prove living matter proper and nerve-tissue to be one and the same thing; and we can trace the ultimate fibrils of nerves to direct or indirect connection with the dental fibres. Any irritation of the dentinal fibrils is transmitted to the nerves which are present in the pulp-tissue.

It has been demonstrated that the so-called cartilaginous basis-substance is pervaded by a delicate reticulum, and, although this cannot be directly seen, we have to assume its presence from facts obtained in the study of embryology, and in the study of the different appearances of the teeth in caries, as shown by Frank Abbott.

The enamel proves to be a live tissue, and supplied with a certain amount of living matter,—scanty, it is true, but in structure akin to dentine. Although its first stage is epithelial in nature, Bödecker's studies have shown that this epithelium is in turn changed into medullary tissue, which gives rise to the enamel—a complicated course which, however, is known to occur in the thyroid body.

The enamel-rods interlace in different directions, have interstices between them, and here is found living matter, which, as a reticulum, pervades the whole enamel. In the earliest formation of the tooth in the foetus, when the structure of the enamel is identical with that of the dentine, we can see the fibrils with great distinctness.

We have obtained an idea about the life of the enamel and the dentine, and, of course, the cementum ranks among the living tissues, as does bone.

(To be continued.)

British Journal of Dental Science.

LONDON, JULY 15, 1882.

GENERAL MEDICAL COUNCIL, SESSION 1882.

THIS has been perhaps the most important session of the General Medical Council so far as Dentistry is concerned, several contravened questions having been brought to a definite conclusion, thus modifying the mental confusion that has existed ever since the Act passed. The report of these proceedings are so voluminous that we can only at present touch very slightly on the most salient points, all of which we shall probably refer to more thoroughly on future occasions. Of the report itself we can only publish part; the remainder, however, will appear in our next issue.

The first resolution must we imagine rudely dispel any lingering hopes that the dream of the Executive of the British Dental Association as to the wholesale clearance from the Register that it contemplated when it marked out some *four hundred* names as its intended victims will ever be realised. The Medical Council still hold the liberal views with which they started, and decline to act upon the British Dental Association's suggestion to erase a name from the Register in order to try the question, and rightly throw the onus of finding the necessary evidence of fraudulent representation on the Association. The Association has submitted the opinions of three eminent lawyers taking its views, but has been checkmated by the Council having obtained the opinions of three equally eminent legal authorities holding diametrically opposite opinions: to the effect that that which was legal *before* the Act passed was intended to be included in the Act. This seems not only justice but common sense. Dr. Quain, in his remarks, animadverted rather severely on the Association having taken upon itself without authority to send a letter to many whom it deemed unfit to be on the

Register, advising them "that you should in writing request the Registrar to remove your name from the Dentists' Register," saying ("mind, this is from an outsider"), as a matter of fact, all those who were frightened by the suggested pains and penalties into removing their names were subsequently invited to restore them. Thus this vexed question, we presume, is settled for the time being.

There was then an animated debate on the subject of entering the legal opinions on the Council's minutes, and thus publicly showing the reasons why such and such decisions were arrived at. This resulted negatively, although, as will be found on perusing the debate it left very little of the secret, if any, to preserve for the Council's private use.

A tardy act of justice was accomplished after some lively arguments and passages of arms by the carrying of Sir William Gull's motion, "That any or all of the qualifications in Schedule A of the Medical Act be registrable in the Dentists' Register," a most wholesome correction of the Register, whereby all those holding higher degrees of medical education are allowed to record them, and thereby render the Register what it should be, a guide in seeking merit. Could an anomaly reach much greater absurdity than by registering such a name as Edwin Saunders, who is F.R.C.S. Eng., Pres. Met. Branch Brit. Med. Ass., Pres. Odont. Soc., Fell. Roy. Med. and Chir. Soc., F.G.S., &c., simply as "In practice before July 22nd, 1878," and yet thus it is in the issue for 1881.

The British Dental Association, by an influentially signed memorial, suggested that "the time has now arrived when exceptional examinations (*sine curriculo*) should be altogether discontinued." We are pleased to see that the result was that "No motion was made upon this, nor did any remark pass with regard to it from any member of the Council." Suggestive silence.

Another act of justice of the greatest interest to students was the carrying of Mr. Turner's resolution:—"That the three years' instruction in mechanical Dentistry, or any part of it, may be taken by the Dental student either before or after his registration as a student, but that NO YEAR of such mechanical instruction shall be counted as one of the four

years of professional study unless taken AFTER REGISTRATION." This is important and should be widely known.

When the British Dental Association, well within the bounds of its legitimate province, requested permission to prosecute two individuals for what appears a flagrant infringement of the Dentists Act, they immediately received it, but when they made the monstrous suggestion that, during the interval of the sessions the General Medical Council should literally transfer to the "Representative Board or to the *Hon. Sec.* of the Association" its special prerogative, the chief safeguard of the unbiassed administration of the Act, viz. the right of deciding whether any particular case of alleged infringement shall be prosecuted or not (as will be seen in a letter dated June 27th, 1882, in next issue), it very properly and promptly received the rebuke it so well merited by a direct and uncompromising refusal. In reference to this, Dr. Quain said: "But the letter asks a great deal more than that," when Sir William Gull replied "I know it does, but that is not what we are prepared to grant. We can only give him (*Hon. Sec.*, British Dental Association) permission in individual cases."

THE FIRST LEGAL PROCEEDINGS UNDER THE DENTISTS ACT.

THE first prosecution has terminated in an utter collapse; it has not solved a single one of the knotty points with which the act bristles from end to end; it has not proved anything that was not known before; although it certainly bears further witness to the "glorious uncertainty of the law" and the little reliance that is practically to be reposed in a "legal opinion." It is true it was a "peculiar case," and we should hope not by any means a typical one. Yet it opens up some very strange points for thought. In the first place it shows, in no uncertain manner, how very undesirable it is that, in any case, it should be competent for a private individual to institute proceedings, as no matter how pure

or patriotic his motives, it is sure to lay him open to the suspicion of personal and interested motives. It is certainly far better where such prosecutions are requisite that they should be undertaken by a public and representative body, where no such motive can be even insinuated. As at present we have no "Dental Defence Association," it is legitimately within the scope of the British Dental Association, and we are glad to see, and indeed congratulate it, that it has solicited and obtained leave from the General Medical Council to proceed in certain cases, but we trust a time will come—when the profession is more settled—that it will be—as it was at a recent meeting of the Medical Defence Association—that "the general feeling was expressed in favour of assigning the duty of prosecuting under the Medical Acts in future definitely to the Public Prosecutor."

The real point at issue (denuded of technicalities) was whether the name of a man once existent, but now *non est*, and consequently not on the Register, who had commenced and raised a "Dental business," could be retained by the present proprietor, who *is* registered but at another address.

Mr. Lushington, the magistrate before whom this question first came, considered it "unprofessional" to practise under a "false name," and practically referred the question for decision to the General Medical Council, for which purpose the hearing was adjourned. This authority, taking a broad view of things *as they are*, considered that if the proprietor put up his own name his predecessor's might also remain for a time (the time being left indefinite). Whether on the rehearing the magisterial view would or would not have confirmed this decision we are left in ignorance, for in the mean time it had been ingeniously discovered that the person who had *obtained* permission to prosecute, having transferred his privilege to the "Medical Alliance Association" (whose solicitor had accepted such transfer), had thereby put himself out of court, and the "Alliance," never having had the Medical Council's permission, had had no right to prosecute at all. This objection being raised, the magistrate considered it fatal and dismissed the summons.

Without expressing any opinion, we feel inclined to pro-

pound several question suggested by this abortive trial. Was it because the name "Charles Smith" was not on the Register that it was improper for the proprietor to retain it as long as he saw fit? or was it from the simple matter of fact that no such person was there? If the latter, how will such a view affect the future sale and purchase of Dental practices? At present, when a Dental or medical practitioner either retires or dies, it is customary to sell the practice; in either case it is unusual to remove the old name, although its owner is no longer present. Will this in future be an "unprofessional" proceeding?

Another curious question arises. The Act exempts those on the Register from serving as jurymen, militiamen, &c. The Act requires (Section 11, Subsection 2) that the Dentists' Register shall "state the full names and *addresses* of registered persons." Does "addresses," being in the plural, mean professional and private addresses? and would the exemption hold good for the private address if not registered? or does it refer only to those practitioners who have plurality of professional addresses, and so tacitly sanction that mode of practice which can hardly be entirely personal? And if this be the correct reading, which is most to be deplored, a principal practising in an assistant's name or assistants practising in a principal's name? The Rev. Dr. Haughton, in addressing the General Medical Council, said, "There is some mystery about Dentistry in every direction, I cannot understand it." We confess we are like him.

AN APPEAL.

AFTER careful investigation, we are so fully satisfied as to the genuineness of the sad position of Mrs. Ashenhurst—on whose case we remarked on p. 556—that we venture to make an appeal to the kind feelings and sympathy of the profession on her behalf. When we point out that SHE IS A YOUNG WIDOW LEFT TOTALLY UNPROVIDED FOR, WITH FIVE CHILDREN TO SUPPORT, THE ELDEST OF WHOM IS

NOT YET ELEVEN, we feel that these bare facts speak more eloquently for her cause than anything we can possibly add to them.

Her late husband was for many years with Mr. François both as apprentice and assistant. This gentleman speaks most highly from personal knowledge both of the deceased and his widow, and warmly recommends her as deserving of all the support that may be forthcoming, to enable her to earn her livelihood. Mr. George Weaver, L.D.S. Eng., with whom he was assistant to within a few weeks of his death, also testifies to the urgent nature of the help required, and the Rev. E. A. Midwinter, of St. Paul's Rectory, Blandford Square, London, N.W., has kindly undertaken the responsibility of seeing that any sum that may be raised shall be applied to the greatest advantage.

Mrs. Ashenhurst has been accustomed to business, and it is proposed (if sufficient help be forthcoming) to establish her in a small retail business. There should be no difficulty about this if the matter is only taken up by *the many*.

Nor is it necessary that each subscription should be large. Amongst assistants alone (and we would beg all employers to bring this to the notice of their assistants), if but two thousand sent *twelve stamps each*—which they would never miss—the widow might be enabled to keep and bring up her family as respectable and useful members of society.

The following promises have been given :

	£.	s.	d.
Dr. R. T. Freeman	1	1	0
J. Sugden Crapper, Esq. . . .	1	1	0
G. Weaver, Esq.	0	10	6
H. François, Esq.	0	10	6

Subscriptions may be sent to the Editor of the 'British Journal of Dental Science,' 11, New Burlington Street, London, W., which will be acknowledged in this Journal.

Post-office orders should be *crossed* and made payable at "London."

Manipulative Miscellany.

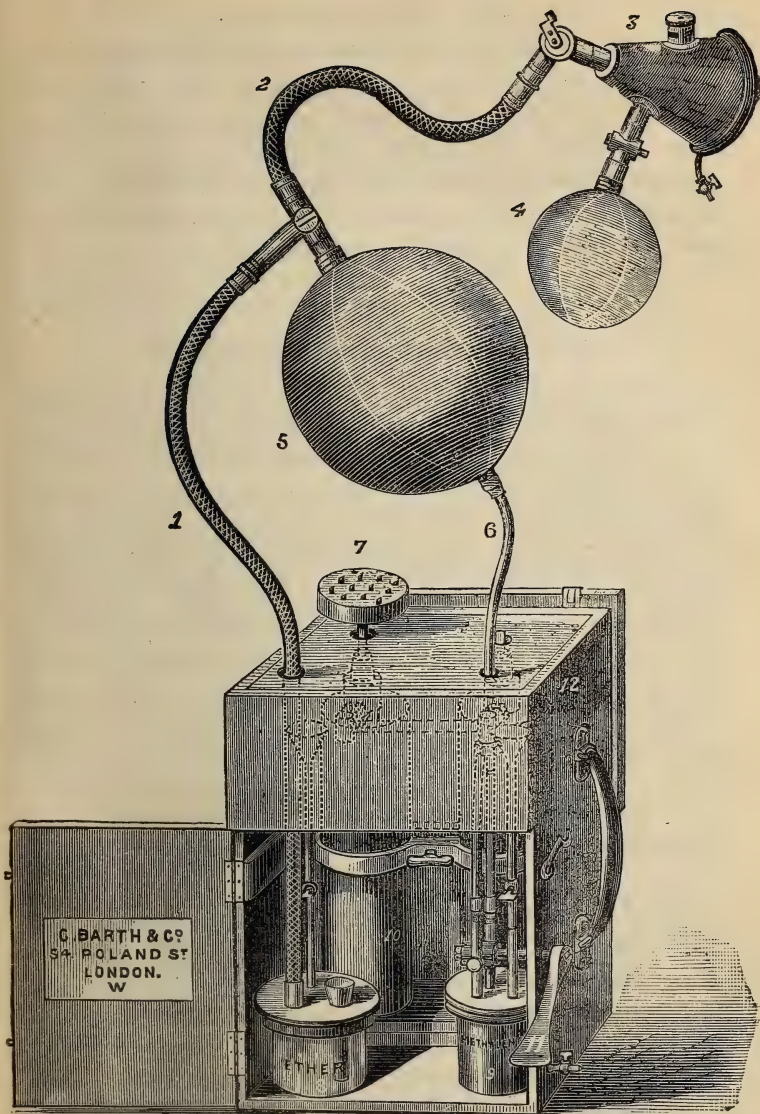
DR. R. T. FREEMAN'S COLLECTIVE APPARATUS FOR ADMINISTERING ANÆSTHETICS.

Mr. G. BARTH, Poland Street, has manufactured the above apparatus in connection with the 'antiseptic face-piece' recently noticed, also designed by Dr. Freeman. The advantages claimed are that, in an exceedingly compact and portable form, the box—which is but 13 inches long and 7 inches wide by 9 deep—contains all the requisites for anæsthesia for short or long operations, applicable either for hospital, travelling, Dental, or general practice requirements, and so arranged as to give the administrator perfect freedom with his hands, almost the whole being controlled by the foot. It is only claimed for it that it is a collection of familiar appliances arranged and adapted in a more convenient manner, and capable at the will of the operator of being used for any of the usual anæsthetic agents or any combination of them, without even removing the face-piece from a patient. Thus, whilst nitrous oxide gas is being inhaled, a touch of the foot on a little treadle produces in combination ether, bichloride of methylene, &c., as may be desired, or with protracted operations the simple turning of a tap makes it into an ether inhaler only; it may also be used as a gas or gas and ether inhaler separately.

We can only now thus briefly allude to the general principles of this combination, but in our next issue hope to give a full description and detailed account of its working.

PORCELAIN CAVITY STOPPERS.

MESSRS. C. ASH & SONS are now manufacturing the above somewhat of the same shape as the American ones previously described (p. 594), and to be used in the same manner; they, however, have this improvement, that the under side, that is, the portion to be embedded in the filling, is *roughened* with the object of obtaining a firmer grip in the material.



DR. FREEMAN'S APPARATUS.

NEW SHAPED TOOTH.

THEY have also manufactured another new-shaped tooth designed for close "bites," with the pins placed close down towards the base, and the tooth substance bevelled from a little above the pins to the cutting edges, giving thereby the fullest possible freedom for forward and lateral action in mastication. The colour and pattern of these teeth are new and deserve particular attention.

THE DOWSETT SUCTION VALVE.

MESSRS. W. & J. JAMIESON write with respect to the new bedding for vulcanising into the palates of suction plates, and noticed in our last issue as manufactured by Messrs. C. Ash and Sons, that they introduced a similar bedding over four years ago, which they submitted to Mr. Dowsett's notice, and subsequently exhibited at the International Medical and Sanitary Exhibition last year. The little apparatus is precisely identical in principle although somewhat differing in form from that already described, and is held *in situ* by being nailed to the palate of the model previous to flasking, just in the same manner as there mentioned.

RITCHIE'S CHAIR BRACKET TABLE AND SPITTOON-HOLDER.

MR. J. RITCHIE has an ingenious chair bracket table, which consists of a brass socket and sliding rod adjustable at any height, having at its upper extremity a double-jointed arm carrying the table, that, so to speak, folds upon itself and thus occupies very little space. The table revolves on its own centre, admitting of any desirable position. There is also adjusted to the sliding rod a detachable horse-shoe spittoon bracket-arm jointed in like manner, to give equal facility of position for the convenience of a patient. It forms a neat and serviceable article and can be readily mounted on most operating chairs.

General Medical Council.

WEDNESDAY, 5TH JULY, 1882.

Dr ACLAND, President, in the Chair.

DR. PITMAN moved that the following communications with regard to Dental registration be entered on the minutes of the Council :

(a) Extract from the Executive Committee's Dental Minutes of July 28th, 1881.

" Read:—The following Communication from the British Dental Association, together with the 'opinion' and 'explanatory Resolution' therein referred to :

" 40, Leicester Square; July 16th, 1881.

" DEAR SIR,—I am requested by the Business Committee of the British Dental Association to forward to you the accompanying opinion, and to beg that you will place it before the Medical Council, together with the enclosed explanatory Resolution.

" I am, dear Sir,

" Yours very truly,

" JAMES SMITH TURNER,

" Hon. Sec. B.D.A.

" The Registrar of the General Medical Council.

" Resolved:—That the Committee acknowledge the receipt of the foregoing Communication, and inform Mr. J. S. Turner that, in the opinion of the Committee, the steps requisite to be taken to try the correctness of the course taken by the General Council, under the advice laid before it, rest with the Dental Association and not, as suggested in the opinion now forwarded, by the removal of a name which, in the judgment of the Council, is registered in conformity with law."

(β) Extract from the Executive Committee's Dental Minutes of November 11th, 1881.

" Read:—The following Communication from the British Dental Association, in regard to the Resolution contained in foregoing extract (a):

" British Dental Association (Incorporated June, 1880),

" 40, Leicester Square, W.C.; October 15, 1881.

" SIR,—I am directed to acknowledge the receipt of your

communication, dated August 3rd, 1881, and in reply thereto to state, for the information of the Medical Council, that the Representative Board of the British Dental Association is advised that the question lately raised respecting the correction of the Dentists' Register cannot be settled by action taken under Section 35 of the Dentists Act; furthermore, that inasmuch as the Council, in full session, on February 3rd, 1881, declared that sufficient evidence of error in registration had not been adduced to justify the erasure of the names under consideration, it be asked that the memorial, with the appended legal opinions—constituting strong additional evidence—addressed to the Council, and in part considered by the Executive Committee on the 28th of July, be laid before the Council at its next session.

“ On behalf of the Representative Board of the British Dental Association,

“ I remain, yours obediently,

“ JAMES SMITH TURNER,

“ W. J. C. MILLER, Esq., B.A.,

“ Hon. Sec. B.D.A.

“ Registrar of the General Medical Council.

“ Resolved:— That the several documents and legal opinions in possession of the Council having reference to registration under the Dentists Act be placed in the hands of Mr. Farrer, the solicitor to the General Council, for the purpose of his further advising the Committee thereon.’

(γ) Extract from the Executive Committee's Dental Minutes of January 6th, 1882.

“ A Communication was made by the solicitor of the Medical Council in regard to the foregoing clause (β) of the Dental Minutes of the Executive Committee's Meeting of November 11th, 1881 (Minutes, vol. xviii, pp. 255—6).’

“ 15. Report by the Dental Committee on the cases of John Thomas Lambert and Joseph Walker :

“ With reference to the cases of John Thomas Lambert and Joseph Walker, referred back to them by the General Council, the Committee find that John Thomas Lambert and Joseph Walker have now answered the communications addressed to them, and that they are in the same position as regards qualification as the other persons who are on the Dentists' Register, and who answered in due time the letters sent them by the Council.

“ The Dental Committee report these facts to the General Council.

“ HENRY W. ACLAND,

“ June 26, 1882.”

“ Chairman.

Dr. PITMAN.—As there are so many new members of the

Council here, perhaps it would facilitate business if Dr. Quain, who is so familiar with the Dental business, would make some brief statement before Mr. Farrer, our solicitor, gives us his opinion.

Dr. QUAIN, in seconding the motion, said—"I shall have very great pleasure in giving a short historical outline of the proceedings of the Council with regard to this Dental business. They have been immensely misunderstood, but in making this statement I do not wish to add any comments to incite discussion. I shall reserve what I have to say on that head to some future occasion. I beg leave to begin by saying that the first step which we took was to require the person seeking to be registered to send in the declaration which will be found in the schedule to the Act accompanied by certain statements which we required to be made in reference to circumstances connected with the employment of persons who applied to be registered. We did not vary the words of the schedule, but we added to it, under the advice which came to us from the Dental Reform Association. That led to the formation of the Register which from time to time has been altered. It is unnecessary now to refer to those alterations, but it will suffice to say that when the Register was published we were favoured by communications from great numbers of persons. First, we were favoured by a communication from Mr. Smith Turner, the Hon. Sec. of the British Dental Reform Association, which is to be found in the minutes of the Executive Committee of the 16th June, 1880. He sends a list of a number of persons who have been registered in the Dentists' Register as, according to their own attested declaration, having been at the passing of the Dentists Act, 'in the *bonâ fide* practice of Dentistry with pharmacy,' but whose names are not to be found in the 'Chemists and Druggists' Register' of 1878, such persons, he says, being liable to have their names erased. Therefore, we must look upon Mr. Turner, representing the British Dental Association, as the plaintiff in the case. Then, in addition to that, this gentleman sends to those persons whom the Council had thought fit to register the following letter:—'Sir,—I am directed by the Representative Board of the British Dental Association to call your attention to the circumstance that, although you have been on your own declaration registered in the Dentists' Register as in the *bonâ fide* practice of Dentistry in conjunction with pharmacy your name is not on the 'Chemists and Druggists' Register.' Under these circumstances your registration in the Dentists' Register is, in the opinion of counsel, a clear violation of the provisions of the Dentists

Act. The Representative Board therefore suggest' (mind this is from an outsider) 'that you should in writing request the Registrar to remove your name from the Dentists' Register. Should you not see fit to follow this recommendation within fourteen days from the date of this letter the Board will feel bound to bring the case before the General Medical Council, the possible result of which proceeding will be that your name will be erased from the Register, and that you and the witness to your declaration are liable to be proceeded against under the appended Section 35 of the Dentists Act, which was prominently printed upon your declaration paper.' Then comes a letter from the defendants, that is to say, a letter from a registered Dental practitioner, to the Medical Council, which is as follows:—'On the 24th May last I received a letter from the British Dental Association calling in question the correctness of the declaration made by me in compliance with the requirements of the Dentists Act. The Act required those who desired to register themselves as Dentists to state if their practice was alone or in conjunction with pharmacy, &c., and as it did not specify that this meant being registered as a chemist and druggist, and as I obtained my living in part by assisting in Messrs. Gilbert & Co.'s homœopathic pharmacy, with which business I have been connected for the past ten years, and being anxious to answer the questions fully and conscientiously, I thought it my duty to state that my Dental practice was in connection with pharmacy as stated. You may judge, sir, of my surprise at finding that my desire to be correct had thrown me open to a charge of fraud and untruthfulness.' I need not read the whole of the letter, but it was accompanied by this statement:—'I hereby certify that I have known Mr. J. Culver (the writer of the letter) for the past three years as earning his living in the practice of Dentistry in conjunction with Messrs. Gilbert & Co.'s homœopathic pharmacy.—Christopher Wolston, M.D., M.R.C.S.' Then we received a letter from Mr. Smith Turner in which he enclosed a list of some 400 persons who, according to his contention, were liable to have their names erased from the Register. We now arrive at the proceedings of the Dental Committee, and from the minutes we find that on the 16th July, 1880, Mr. Ouvry attended in order to advise the Committee as to certain legal questions referred to the Committee by the General Council. Then the Dental Committee, consisting of five members, resolved, 'That the several letters and documents relating to entries in the Dentists' Register referred to the Committee by the General Council be placed

in the hands of the solicitor of the Council for his opinion and report thereon.' Then on the 3rd February, 1881, the Dental Committee, having considered the corrected list of persons submitted to the General Council and by the General Council referred to the Dental Committee for inquiry, find the following facts. Then they set out a number of facts which they find with reference to the people in the corrected list sent by Mr. Smith Turner, which I should not think of troubling the Council by reading, but having found those facts they were submitted to the Executive Committee, and of course the Executive Committee were in duty bound to submit those facts to the Council. Having ascertained the facts the Executive Committee desired Mr. Ouvry to bring before the Council this large volume of facts which were collected with the greatest care and conscientiousness by Mr. Ouvry, and which cost the sum of £600; and Mr. Ouvry was requested to attend the Council and advise the Council as to the steps it should take. With his usual carefulness Mr. Ouvry took care to provide himself not only with his own opinion but with the best opinion he could obtain, viz. the opinions of the Solicitor-General and Mr. Vaughan Hawkins. It is a wonderful puzzle to me why new opinions were taken, but, however, Mr. Ouvry being requested to advise the Council on the facts, this was the first time the facts were before the Council, and he came provided with the highest opinions he could obtain, which opinions you will find were submitted to the Council at its last meeting. We were asked why we did not go back to the opinions of Mr. Justice Bowen and Mr. Fitzgerald. In the first place Mr. Justice Bowen was on the bench, and we could not go to him again, and with regard to the opinion that he had previously given he had not an opportunity of advising on the facts. He advised on the various questions submitted connected with the formation of the Register, but never on the facts. Then as to our not taking Mr. Fitzgerald's opinion, he appeared for the plaintiffs, as I call them, the Dental Reform Association. We were the judges sitting on the bench, and we were asked to take the opinion of the plaintiffs' counsel. It would have been like asking us to do that to ask us to take Mr. Fitzgerald's opinion. We placed the matter in the hands of our solicitor to take the highest opinion he could, and he brought it before us at the last meeting, and then the Council came to a decision to this effect:—'That the report of the Dental Committee not having put the Council in possession of evidence to show that any of the registered Dentists named in the corrected

list of persons submitted by the Hon. Sec. of the British Dental Association or of the registered Dentists named in the letter of Dr. Jacob were not at the time of their registration *bond fide* engaged in the practice of Dentistry, the Council is therefore not prepared to order the removal of any such persons from the Dentists' Register.' We acted on the deliberate judgment of the three counsel who acted as our assessors and advisers in the matter. These facts and the decision of the Council had scarcely been published when the Executive Committee received a very respectful and reasonable letter from the British Dental Association, dated 16th July, 1881:—'Dear Sir,—I am requested by the Business Committee of the British Dental Association to forward to you the accompanying opinion, and to beg that you will place it before the Medical Council, together with the enclosed explanatory resolution.' The opinion there referred to is the opinion of that deservedly high authority, the late Sir John Holker, Mr. R. S. Wright, and Mr. Fitzgerald, but that is again the opinion of the plaintiffs' counsel. It is no breach of confidence to say that our President submitted that very judicious opinion to the Council. Then it was resolved by the Executive Committee:—"That the Committee acknowledge the receipt of the foregoing communication, and inform Mr. Turner that in the opinion of the Committee the steps requisite to be taken to try the correctness of the course taken by the General Council, under the advice laid before it, rest with the Dental Association and not, as suggested in the opinion now forwarded, by the removal of a name which in the judgment of the Council is registered in conformity with law.' That was the decision of the Executive Committee, but that not being deemed satisfactory there came a further letter from the Dental Reform Association asking that the question should be submitted to the Council. I have now brought the matter down as simply as I can to the present time, when the letter is laid before you. We have Mr. Farrer here, and he will tell you what steps he has taken to lay the matter before counsel at the request of the Executive Committee."

Mr. FARRER.—As I understand Dr. Quain requests me to take up the story from the point at which he left it, and to tell the Council generally what has been done in this matter from the date at which Dr. Quain left it. Dr. Quain mentioned the opinion of Sir John Holker, Mr. R. S. Wright, and Mr. Fitzgerald, which was taken by the Dental Association and which was sent to the General Medical Council, the opinion having for its object to endeavour to persuade the Council to erase from the Dentists' Register

those persons who had been entered upon the Register as Dentists by reason of their holding legal Dentistry qualifications, and who added "with pharmacy" or such other qualification as is mentioned in the Act, this latter qualification, however, not being sanctioned by their entry upon the Pharmaceutical or Surgical registers. Upon that counsel have differed very much, Sir John Holker, Mr. Wright and Mr. Fitzgerald have held that persons who were not entered on the Pharmaceutical or Surgical registers, but were entered as Dentists coupled with the qualification of pharmacy or surgery, as the case may be, ought to be erased from the Register. That you will observe was contrary to the opinion which the Council itself had taken, namely, the opinion of Sir Farrer Herschell, the Solicitor-General, Mr. Vaughan Hawkins, and Mr. Muir Mackenzie. There being, therefore, this difference of opinion between the lawyers, under these circumstances, and the whole case being referred to me, I brought the whole of the facts together, and placed them again before Sir F. Herschell, Mr. Vaughan Hawkins, and Mr. Muir Mackenzie, with the view that they might reconsider their original opinions by the light, if light there was, thrown on the subject by the opinion of Sir John Holker, Mr. Wright, and Mr. Fitzgerald, and, if they thought fit, modify or alter their opinions in any way. We had a long consultation on the subject, and the result of it was the opinion which I hold in my hand and which, with the permission of the Council, I will read. (Hear, hear.) Inasmuch as this is the latest and the best considered perhaps of all the opinions that have been taken on the subject, and inasmuch as it is the opinion of counsel, taken on behalf of this Council as their confidential advisers, it is probably the opinion which it would be wise to follow. After calling attention to the opinion of Sir John Holker, Mr. Wright, and Mr. Fitzgerald, of which copies were sent to the three gentlemen who advised on behalf of the Council, the question put was this:—"In this view the Executive Committee desire counsel to advise them whether, having regard to what has taken place as appearing upon the minutes above referred to, and having regard to the facts brought before Sir John Holker and his associates, the Solicitor-General, Mr. Vaughan Hawkins, and Muir Mackenzie, see any reason for varying from the opinions expressed by them in August and December, 1880. Then the opinion is: "We have considered the facts set out in the minutes of the Council, and also the facts brought before Sir John Holker, Mr. Wright, and Mr. Fitzgerald, as well as the opinion which they have given on the construction of

Sub-Section c of Section 6 of the Dentists Act, 1878. The practical question on which a difference of opinion appears to exist is, whether the words 'either separately or in conjunction with' the practice 'of medicine, surgery, or pharmacy' necessarily exclude from registration, under Sub-Section c, persons who having been at the time of the passing of the Act *bonâ fide* engaged in the practice of Dentistry in addition thereto, regularly and at the same place practised medicine, surgery, or pharmacy without being on the Medical or Pharmaceutical Register (as the case may be), or carried on some other calling. We are of opinion that the words in question have not this effect. Any person who can show that he was *bonâ fide* engaged in the practice of Dentistry at the time of the passing of the Act is, in our opinion, entitled to be registered whatever his other occupations may have been and wherever they may have been carried on. This appears to us to have been the intention of the Legislature when the provisions of the State are examined. Prior to the passing of the Act it was perfectly lawful for a person to practise as a Dentist and so to style himself, although he followed some other calling also, and the person so practising could recover charges for his Dental operations. Since the passing of the Act no person unless on the Register can either call himself a Dentist or recover his charges. We think that it was the intention of the Legislature by Section 6, Subsection c, to preserve to all existing practitioners their vested rights, and we cannot conceive that it was intended in the case of persons who followed some other calling, but whose Dental practice might nevertheless be greater than many whose only calling was that of Dentistry, to render it unlawful for them any longer to call themselves Dentists, and to prevent their recovering their charges. The present difficulty appears in a great measure to have arisen from the entries of the words 'with pharmacy' and the like on the Register. In our opinion, these words should not at any time have been placed there. Each applicant for registration under Sub-Section c of Section 6 ought to be applied on the ground that at the passing of the Act he was *bonâ fide* engaged 'in the practice of Dentistry,' without adding anything else (see Schedule to the Act), and the only question for the consideration of the Council was whether he was so engaged. That fact once established to their satisfaction, we think the Council were bound to place his name on the Register. We would repeat the advice already given to the Council, that in all cases such words as 'with pharmacy' should be erased from the Register so that the Dental qualifications

only of the persons registered should appear on it." That was their ultimate and well-considered opinion after having had the matter canvassed, and canvassed by all that could be said on both sides. In point of fact, the feeling of counsel was this:—Here the Legislature intended to give to all who were *bonâ fide* practising the same rights that they had before the Act passed, and not to limit those rights in any way but to regulate rather the entries upon the Dental Register for the future. If, therefore, any course of action were taken which would limit or reduce the numbers of those who actually and *bonâ fide* practised Dentistry before the Act came into operation, that would be a result which was not intended by the Legislature, and which they think is not included in the words of the Act. They think that the construction to be put upon the Act should be such as to preserve to all the previous *bonâ-fide* practitioners the rights which they had at the time when the Act passed. In point of fact, during the discussion notice was taken of the fact, although I do not know that that has much to do with the subject from a legal point of view, that if the rights of previous practitioners had been intended to have been diminished, the Act would not have passed, because such an opposition would have been raised to it that it would never have received the approval of the Legislature. But the point to which the Council have now to direct their attention is, what was the meaning of the Act. Upon that you have the well-considered and reconsidered advice of the Solicitor-General, who is, beyond all question, one of the best lawyers of the present day, and upon that advice I can only, as far as I appear here as adviser to the Council, recommend you to act. It will be impossible for you to act upon the opinions taken adversely to those of your own legal advisers. You will see immediately the position you will be in if you do. Supposing you were to prefer to act on the advice of Sir John Holker and his associates, it is more or less known that you have taken opinions on your own behalf, and, of course, the action that you have taken in retaining names upon the Register is supposed to be in pursuance of the opinions you have taken. Now, if you were to remove a name from the Register and the person whose name was so erased brought an action, the Council would be placed in a very awkward position if it came out, as it might very well do, in the course of the trial, that in erasing the man's name and thereby limiting the free action and privileges of persons who had practised Dentistry before the passing of the Act, you were acting in the teeth of the advice that you had received from your own legal advisers. Under these circum-

stances, I do not think the Council can or ought to take any other course than that of following the advice contained in the opinion which I have read.

Dr. Pitman's motion was then put and carried unanimously.

Dr. STORRAR, in moving "That the opinions of Mr. Bowen, Mr. Fitzgerald, the Solicitor-General, and Sir John Holker in regard to the registration of Dentists under the Dentists Act (1878) be entered in the General Council's Minutes," said:—I have listened with a great deal of attention to what has fallen from Dr. Quain and Mr. Farrer with a sincere desire that in this question which is now in dispute between the Dental Association and this Council, justice should be done. This is a matter which concerns every individual member of the Council, because the Council having taken upon itself the duties of administering the Dentists Act, there being no direct representative of the Dentists on this Council, it behoves us therefore to consider well the full weight of the responsibility which is upon our shoulders, and not to lay ourselves open in any way to the charge of favouritism. If it is clear that the views which have been set forth by Mr. Farrer are sound, I should be one to cordially fall in with his views, however much I might personally regret them, and feel that the Dentists had been very hardly treated. But what I desire for myself and for the members of this Council is that we should have the opportunity of exercising our own judgment upon this matter. We have had the opinions of Sir Farrer Herschell, Mr. Vaughan Hawkins, and Mr. Muir Mackenzie, but where are the other opinions? First of all there was an opinion given by Mr. Fitzgerald, who, as the original draftsman of the Bill on behalf of the Dentists, ought to have known what the leading Dentists wanted, and ought to have framed the Bill with a view to fulfilling their requirements. Next there was the opinion of Mr. Bowen, afterwards Mr. Justice Bowen, and now Lord Justice Bowen, one of the most distinguished men of his time in his profession, but it is a most remarkable fact that the name of Mr. Bowen never escaped the lips of Mr. Farrer on this subject. I want to know what the opinion of Lord Justice Bowen is. Let that appear with the opinion of Mr. Fitzgerald, as I am given to understand that the opinion of Mr. Justice Bowen corresponds with that of Mr. Fitzgerald. Then the opinion of Sir F. Herschell is taken. I quite admit the talent of Sir F. Herschell. He is a great advocate. How far he is a sound lawyer I am not competent to judge. He is a personal friend of mine, and therefore do not let it be

supposed for a moment that I am prejudiced against him. But Sir F. Herschell gives a very distinct opinion opposed to the opinion of Mr. Fitzgerald and opposed to the opinion of Mr. Justice Bowen, which opinion he has confirmed after the opinion of Sir John Holker was drawn to his attention. I do not know whether Mr. Justice Bowen's opinion was submitted to him or not. But there is this much to be said. Sir John Holker has lately disappeared from the scene, and bearing in mind the warm and evidently genuine encomiums which were passed upon him by his brethren on the bench as one of the quietest and most modest, but still one of the most profound lawyers of his time, I want to have his opinion, and I wish it to be fairly considered by the members of the Council as men of common sense. There are four opinions. The opinion of Mr. Fitzgerald, the opinion of Mr. Justice Bowen, and the opinion of Sir John Holker are all on one side, and there is the opinion of Sir F. Herschell on the other side. Do let us see these opinions. Do not put blinkers upon us and ask us simply to follow Mr. Farrer. I have the greatest respect for Mr. Farrer, as I had for the late Mr. Ouvry, and he was a gentleman for whom I entertained great personal regard as well as a very high opinion of his abilities as a professional man; but at the same time I feel that we are bound according to our own judgments and consciences to do justice to the Dentists, and to enable us to arrive at a proper decision, I ask that the opinion of these four gentleman may be placed upon the minutes.

Mr. TEALE seconded the motion.

Mr. FARRER.—The only reason I did not refer to Lord Justice Bowen's opinion was this, that it was an opinion taken on the 3rd March, 1879, before the Register was formed, and with a view to the formation of the Register. It was not an opinion taken on the present question, which is quite a different one. I should say that the bearing of that opinion is in the same direction as that of Sir John Holker's. I did not refer to it just now because it was given antecedently to the present question arising, and does not touch the present question. The present question is whether in accordance with the request of the Dental Association you shall erase the names of these persons from the Register, leaving them to demand their restoration and to prosecute you by mandamus for their removal. The question that was submitted to Mr. Justice Bowen was a totally different one, viz. how the Register should be formed: the question here is whether you shall erase names already on the Register, the Register having in the meantime been

formed. In addition I may mention this, that while it is quite true that there are the opinions of Sir J. Holker, Mr. Fitzgerald, and Mr. Wright in the same direction as that of Mr. Justice Bowen's, there are the opinions of Mr. Vaughan Hawkins and Mr. Muir Mackenzie as well as that of Sir F. Herschell on the other side, the three latter gentlemen being selected not on behalf of those who are seeking to make you take action of which you disapprove, but on your own behalf, and with a view to your own independent action.

Dr. STORRAR.—In reply to what Mr. Farrer says, I admit that the opinions were taken at different times, but the object with which Mr. Justice Bowen was consulted was how the Register was to be formed, and the object with which the other gentlemen were consulted was whether the Register should be corrected. Does not common sense tell us that the object was precisely the same? What has been the object throughout but to form the Register, either by putting those upon the Register that ought to be on the Register or of taking off the names of the men from the Register that have no business to be there. There may be a difference of time and there may be a difference as to the particular questions, but there cannot be the shadow of difference with regard to the objects for which the opinions were obtained.

Sir WILLIAM GULL said, with great respect to Dr. Storrar, that he might be a great lawyer, but surely it made all the difference in the world whether a man was in possession or whether he was out of possession. It might require a great deal of force to put a man in possession, but when he was in possession it would require a great deal more force to turn him out of possession. He thought that Mr. Farrer was right in the advice he had given, that the names of the persons in question should not be taken off the Register. How they could have got on might be another question. [Dr. STORRAR:—Let us have the opinions.] They might have got on through the bad action of the Council, but that was a reason why the Council should take double care that they did not make a bad action worse by striking them off, unless they could properly do so.

Mr. TURNER.—Was not the opinion of Mr. Justice Bowen obtained by this Council or by the Executive Committee of the Council?

Dr. QUAIN.—Yes.

Mr. TURNER.—I recollect when this question came up last year I asked why had not the Council an opportunity of seeing Mr. Justice Bowen's opinion. I said—Why cannot it be produced, is not it in the archives of the Council? The answer I got was that it was in Mr. Ouvry's offices, and I

always thought it was a grievance that members of the Council might fairly put forward, that they had not seen Mr. Justice Bowen's opinion. It was an opinion which we got for the guidance of the Council, and yet I have never seen it. It seems to me it is a very reasonable thing on the part of Dr. Storrar that he should ask that the opinion of Mr. Justice Bowen should be brought before us so that we may see it. It is another matter, and one that there may be a great difficulty about as to whether we should publish the opinion of Sir John Holker and his associates, because that is an opinion not got by ourselves, but got by another body whom Dr. Quain designates as the plaintiffs in the case. I think it is a matter of very great importance that this Council should have not only all the facts before it, but should also have the various legal opinions that have been given. Dr. Storrar preferred a very reasonable request, I think, in asking that these different opinions should appear on our minutes, and I shall certainly support it.

Mr. MACNAMARA said that Mr. Farrer had stated that these opinions were obtained at different times, and that different questions were submitted to the different counsel, but he would ask this question, Had not every one of those different legal advisers the Dentists Act before him, and was not it on the construction of that Act that the opinions were taken? He would suggest that Dr. Storrar's request be at once complied with, because if it were not it would always leave the motives of the Council open to suspicion. There was no reason why the opinion which had been taken by the Council should not be laid before it. The Council had paid for it and they were entitled to see it. Why it should not appear on the minutes passed his comprehension. As to the other opinions taken by the plaintiffs in the case, they could furnish the Council or the Chairman of the Business Committee with copies if they thought fit, and the whole thing could be entered on the programme of business and come before the Council in that way. He would support Dr. Storrar's motion.

The PRESIDENT reminded the Council that the advice which had been given last year, and which was now repeated, was that these opinions of counsel were for the use of the Council. Those opinions could at any moment be put into the hands of the Council, which was a different thing to the publication of confidential opinions. It was a question for the Council to decide whether the opinions should be published. Mr. Farrer was prepared to read Mr. Justice Bowen's opinion if the Council thought fit.

Rev. Dr. HAUGHTON.—That is not enough.

Mr. FARRER.—As the President has stated, the opinion was taken on behalf of the Council, and every member of the Council is entitled to examine it as much as he pleases; every one of the opinions, in fact, belong to the Council and to every member of the Council, but they are confidential documents, and if you will allow me to say so, as a matter of worldly wisdom, it is a very unwise thing to publish counsels' opinions. It may probably be in the knowledge of the Council that, if any question of law arises in any Government office, that Government office takes the opinion of counsel, but it takes good care never under any circumstances to let their opponents see it. As a rule, it is a very wise thing to keep these opinions of counsel to yourselves, and therefore, so far as regards the question of printing and publishing these questions, I think the Council, although of course they are entitled to see them to guide their own judgment, will do very wisely if they pause before they take any such action as that.

Rev. Dr. HAUGHTON.—If Mr. Farrer is right, might I ask him why the opinions of Sir Farrer Herschell, Mr. Vaughan Hawkins, and Mr. Muir Mackenzie is printed and in my hands. What is to prevent me publishing a copy of this to the whole world to-morrow morning?

Mr. MARSHALL said he would like to hear Mr. Farrer's opinion as to whether this opinion having been printed, he thought it was a right document to put on the minutes.

Mr. FARRER.—If you ask me what I advise I should certainly say not. It is a matter entirely for yourselves, but I should say it is a very unwise thing to do.

Dr. QUAIN.—I should like to say a few words upon the motion. One of the most prominent questions that has been discussed to-day has been why Mr. Justice Bowen's opinion was not printed and published; but it was acted upon and, in fact, that is the opinion joined with Mr. Fitzgeralds' that has led us into all this trouble. If you talk about opinions, you may have as many as you like to get. I have been accused of acting unfairly in this matter, but before I ventured to take any steps I spent five guineas in getting an opinion, and I got the opinion of Mr. Lumley Smith.

Dr. STORRAR.—Was this opinion got on behalf of the Council?

Dr. QUAIN.—Was the opinion of the Dental Association got on behalf of the Council?

Rev. Dr. HAUGHTON.—As a point of order, I must object to every individual member of the Council coming here with his lawyer in his pocket.

Dr. QUAIN.—You did not object to the Dental Association

obtaining opinions. I have a right as a member of this Council to obtain an opinion and to submit it to the Council just as much as the Dental Association, and this is the opinion I got. The case was prepared by Mr. Arnold White.

Dr. STORRAR.—Will you be so good as to give us the whole case?

The PRESIDENT said he thought that Dr. Quain was not speaking upon the motion or the amendment.

Dr. QUAIN.—Then, as an amendment, I will move that the opinion of Mr. Lumley Smith be added to the opinions mentioned in the motion. If those opinions are received, this opinion of Mr. Lumley Smith should be also received. It is as follows:—"I am of opinion that a person who combines the practice of Dentistry with some other occupation should not thereby be disqualified for registration. I think that Section 6, Subsection C, must be read as if it were either separately *from* or in conjunction *with* the practice of medicine, surgery, or pharmacy. The words of Section 11 and of the schedule include all persons engaged in the practice of Dentistry, and the intention of Section 6, Subsection C, was to make it clear that people might be registered as Dentists although already registered under other Medical Acts. 'Separately' must be taken as referring to the medical practice mentioned in the context with it." You may get any amount of opinions, and if opinions are counted on one side and the other, here is another to add to them. I heard Dr. Storrar say that Mr. Fitzgerald was well acquainted with what the leading Dentists wanted. I have no doubt what they wanted was not to do justice to another class of persons, namely, the poor people who are earning livings by doing other things besides practising Dentistry. If the leading Dentists had been properly advised they would have taken care to have adopted a course which was adopted by the veterinary surgeons, and have put themselves in one list and put these other people in another list. There are 400 or 500 people who have been registered as Dentists, but who follow other callings, among others that of barbers. But how long is it since surgeons were barbers? What harm is there if a man is a barber—he may be an excellent Dentist. At one of our meetings I said that a man who pulled out 500 or 600 teeth in a year, and could give us evidence of his fitness to be on the Register, ought properly to be registered, even if he were a barber. There is no reason why he should not be put on the Register if he is qualified as a Dentist. There was a time when Dentistry was little more than the extraction of teeth, and I will venture to say

that Mr. Cartwright first gained his great reputation by the extraction of teeth. I have been told that I have spoken disrespectfully of Mr. Cartwright, who has been the founder of professional Dentistry in this country. I was charged with the abuse of him, but nothing was further from my mind. What I said was that long ago the mere extraction of teeth was one of the first steps towards Dentistry attaining its present position. Dentistry has since then acquired a high position, but there is no reason why these people who practise Dentistry because they follow some other calling should be struck off the Register. Just hear what Sir John Holker says about it.

Dr. STORRAR.—I think Dr. Quain is anticipating the whole of this question. He is proceeding to argue upon the opinion of counsel. What I want is to get the opinions. (Hear, hear).

Dr. QUAIN.—I want to show the Council that we have no business to open up this question again, because there are a multiplicity of opinions. I want to show you that in the opinion of Sir John Holker, our Register is perfectly correct. He says:—"In each case it will be for the Council to decide as a matter of fact whether the person's real business was Dentistry. They would not be precluded from so finding merely by the circumstance that he occasionally (like the homœopathic men) or incidentally or at some other place carried on some other business." That opinion is perfectly in accord with everything we have done.

Dr. STORRAR.—Read the rest.

Dr. QUAIN.—Very well: "But a person whose real business was that of a blacksmith, shoemaker, veterinary, or barber would not be registrable." He declares that a person whose real business is Dentistry is registrable. I say that we have even in Sir John Holker's opinion a strong confirmation of the course we have adopted. (No, no.) When we take the opinion of three eminent counsel to guide us they are our assessors, and we have no right to drag in opinion after opinion to set their opinion aside. Dr. Storrar says that there is no representative of the Dentists on this Board; but that is a statement which opens the question of the propriety of this act altogether. I assure you I see with the greatest pain that gentleman opposite (Mr. Tomes) hanging day after day on the skirts of the Council. He ought to be sitting here or at the head of a Board of Dentists. The Dentists have, from sheer want of proper guidance, made themselves a fragment instead of an independent body. They come and pay their money here which we spend for them, and they have not a single voice in any-

thing that we do affecting them. I am ashamed of it and I regret it deeply; they ought never to have submitted to such an act. If the Dentists Act had, like the Midwives Bill proposes, appointed a separate Board under the control of this Council it would have saved this Council all the trouble they have had. The Dentists might have been in a position to manage their own affairs and contribute to and use their own funds; for here are the two Bills which were before Parliament—one in the original form that the Duke of Richmond had, and the other in the form by which it was suggested to him, and readily adopted by him, that this Council should form a Dental Board and carry out the principles of the Act. This difficulty has resulted from bringing in an Act which was full of difficulties, and now we are going to get deeper and deeper into the mire, by doing what our legal advisers have declared to be illegal. Dr. Storrar has alluded to what the Dentists wanted and said we must do justice. I say the Council should do justice to the poor people whom the leading Dentists would deprive of their means of livelihood. I repeat how very necessary it is to do justice to these people, who are not represented. There is a double responsibility thrown upon us. These people are many of them highly respectable, and it is open to any of them to bring an action against Mr. Smith Turner as representing the Dental Association. He has accused them of putting themselves fraudulently on the Register and frightened many of them into taking their names off. Any one of these people has a good cause of action, and their case would be supported by the opinion of the Solicitor-General and those gentlemen who say that the Council is justified in keeping them on the Register. I hope that the motion will be dropped, and that we shall not leave ourselves open to actions being brought against us.

Dr. A. SMITH said the question appeared to be a very complex one, and the Council should be very cautious in the course it adopted. He might remind the Council that the words "with pharmacy" was introduced into the first Register and was subsequently struck out under advice, and if the Council now put these adverse opinions before the public, it would revive the old disputes, and the Council would get into a great deal of trouble. He thought on the whole, after the history of the case the Council had had from Dr. Quain, supplemented as it was by the advice of Mr. Farrer, that the Council had better follow the advice of Mr. Farrer, and not publish the opinions. The Council should let the matter drop, and not run the risk of opening the door to a wide and probably long-continued litigation on the subject.

Sir WM. GULL said he should certainly vote against Dr. Storrar's motion on the ground that it was an unpractical proposition which would land the Council in great difficulties. If the Council had done anything in the matter of Dental registration it was done. They were countenanced in their action by the best advice that could be obtained, and to discuss the question further was not a proposition of a business character at all. If any wrong had been done that would be brought forward, and the learned counsel who advised the Council how to act would advise them how to defend their action. He would move an amendment that the opinions of counsel for the guidance of the Council on the question of registration should be considered confidential and not entered on the minutes.

Dr. LYONS seconded the amendment.

Dr. HALDANE agreed with the advice given by Mr. Farrer, and thought that it would be most injudicious for the Council to publish the opinions in question. Mr. Farrer had said that they were confidential documents and might be very injuriously used towards the Council on some future occasion, and therefore he (Dr. Haldane) decidedly objected to Dr. Storrar's motion.

Mr. TURNER asked whether the amendment of Sir Wm. Gull covered the opinion of Mr. Justice Bowen and the opinion which had been placed in the hands of the Council of Sir F. Herschell. Mr. Justice Bowen's opinion was given on a case submitted by the Council, and he was therefore the adviser of the Council. Sir John Holker's opinion, of course, they had nothing to do with.

The PRESIDENT said that if the amendment were carried it would hinder the publication of the confidential opinions obtained by the Council.

Dr. LYONS said if the Council were to get into the habit of putting on its minutes all documents of this kind it would lead to a great extension of the minutes and an extension of a very improper character. In others bodies in which he was connected they did not put on their minutes, except in very rare and exceptional cases, such documents as these opinions. They were carefully noted and preserved for use, if at any time they should be officially called for, but never published. It was very undesirable to put them upon minutes, especially in cases where the minutes were made public. He agreed with Mr. Farrer that it would be very undesirable for a body like the Medical Council to publish these opinions. It would open the door to all sorts of cavilling and furnish the defendants with the means of attack. Plenty of people were ready to find holes in the armour of the

Council, no matter how much it protected itself. However regrettable the action of the past might be what had been done had been done and could not be recalled. The Council must accept and place on the Register all those persons who in their view of the Act of Parliament had a right as Dentists to be put on the Register, no matter what other occupations they followed. There was much to be said in favour of the view that Dr. Quain took, but that was beside the question. An act had been done and the Council could not recall it. Parliament might be asked to repeal the Dentists Act, but there was not much prospect of its doing so in the present state of public business, and the less the Council said about the matter at the present stage the better.

Dr. STORRAR.—In reply to what has been said, beginning with the amendment, I have merely to say that there may possibly have been some exceptions during the course of the years that have transpired since the foundation of this Council, but, as a rule, all the opinions of counsel have been published. Mr. Farrer suggests the inexpediency of recording in our minutes these opinions of counsel. Professor Haughton has answered that we have the opinion of Sir F. Herschell. Why should the opinion of Sir F. Herschell be recorded and not the opinion of Mr. Justice Bowen? I am asked why I attach so much importance to these other opinions of Mr. Fitzgerald and the late Lord Justice Holker. I do so for this reason, that those opinions have been taken by a body of Dentists incorporated and holding systematic meetings as the members of a corporation outside this body, and that they, looking to the honour of their own profession, which they are surely fairly entitled to do, judge that they have suffered great injury through the conduct of this Council. They, therefore, are endeavouring to recall this Council to a sense of what is just. That is the reason why I ask that these opinions should be recorded. It is all very true, as Dr. Quain says, that he or any other member of the Council may draw up a case and get opinions from counsel, but it is quite a different thing altogether to the Dentists Association getting opinions from counsel. It is not for me to follow Dr. Quain in a criticism as to what the Dentists ought to have done and what they did not do. To recommend that they should have got an independent Act of their own, and not an Act hung on to this Medical Council, is not only impugning the Dentists but impugning this Council. (Dr. Quain: No, no.) I beg your pardon. The Dentists Bill was sent down to this Council, and they made it a condition that the legislation for the Dentists should be incorporated with the Medical Act.

Dr. QUAIN.—No, no. I rise to order. They have never said anything of the kind.

Dr. STORRAR.—They have said something very like it.

Dr. QUAIN.—No. I rise to order.

Dr. STORRAR.—It was done.

Dr. QUAIN.—I rise to order. This is the resolution of the Council:—"That with reference to the Lord President's Bill, entitled the Medical Act (1858) Amendment Bill as ordered by the House of Commons to be printed, the Council desires to express its wish that the Bill entitled the Dental Practitioners Bill be brought into conformity with the Dental clauses of the Lord President's Bill," and that was not done.

Dr. STORRAR.—We had this Bill sent down to us, we made certain alterations, and it was sent back to the Duke of Richmond. The Government, for reasons of their own, which reasons I do not know, did not adopt all our recommendations, but is that the fault of the Dentists may I ask?

Dr. QUAIN.—Is it our fault?

Dr. STORRAR.—Well, it is not our fault.

Dr. QUAIN.—You said it was.

Dr. STORRAR.—The Government did not choose to take our recommendations. But if we are to go back and assume omniscience as to what should have been done by what was done, we shall occupy the time of the Council for no practical good, and I do not know where the discussion will cease. I will say this simply, that while the Dentists Act exists it is our duty to administer it. It is our duty to be just and it is our duty and our best policy also to prove to the Dentists Association and to the numerous body of respectable Dentists that are practising throughout the country that they have not received injustice at our hands. (Hear, hear). As the first step, therefore, towards that I ask that the opinions that have been obtained by this Council and the opinions that have been got by the Dental Association, namely, the opinions which I have recited in my motion, shall be recorded on the minutes of the Council.

Mr. SIMON inquired what had been the practice of the Council with respect to printing opinions on the minutes.

Dr. PYLE said a great many opinions had been printed on the minutes.

The PRESIDENT said it was the fact that opinions had on previous occasions been entered on the minutes. Pressure both public and private had been put upon the Council to alter the course which it had taken under the advice of its solicitor and counsel. Not a few private communications had been made to the President to urge him to adopt the course of expressing practically a contradictory opinion to

that adopted by the Council, to which the reply had been that the Council had acted on the advice of its legal advisers to the best of its judgment and ability, and it was not for the Council to impugn the course of action it has taken. Those who thought the Council had been in the wrong should attack the Council. He did not see that anything had occurred to cause the Council after the advice which it had received to enter upon the minutes those opinions unless it desired to do so. He did not think what had occurred formerly could be any precedent for the present occasion.

Rev. Dr. HAUGHTON.—It should be distinctly understood that we are reversing our former precedents.

The PRESIDENT.—No; because there are cases also where opinions have not been printed.

Rev. Dr. HAUGHTON.—We are establishing a rule for the future; we are tying our hands because this carries a general principle with it. (Order, order.) The Council ought to understand what they are voting about.

The PRESIDENT.—By this vote we are deciding what we do under the present circumstances. On future occasions the Council will consider what it will do under future circumstances.

The amendment—"That the opinions of counsel for the guidance of this Council for the registration of Dentists be considered confidential, and be not entered in the Council's minutes"—was then put, and carried by 15 against 6.

On the motion of Dr. STORRAR, the names of the members voting for and against were taken down as follows:

For the amendment 15. Against the amendment 6.

Dr. Pitman.	Dr. A. Smith.	Dr. Pyle.
Mr. Marshall.	Mr. Collins.	Dr. Storrar.
Mr. Bradford.	Dr. Quain.	Mr. Turner.
Dr. Chambers.	Sir Wm. Gull.	Mr. Macnamara.
Dr. Humphry.	Mr. Simon.	Rev. Dr. Haughton.
Dr. Haldane.	Mr. Teale.	Dr. Fergus.
Dr. Pettigrew.	Dr. Lyons.	

The amendment was then put as a substantive motion and carried.

Mr. TURNER said that from what had taken place in connection with the foregoing discussion, it was quite evident that amongst counsel of the very highest position and authority there was a very important difference of opinion as to the exact meaning of certain clauses in the Dentists Act. He thought it was extremely important that there should be a judicial decision obtained in a court of law, so that the Council might be guided in a definite way, and might avoid in future anything like such a discussion as it had been

engaged in during the last hour. A special reason why the Council should come to some conclusion upon this matter was because among the documents before them in the programme of business was a letter addressed to the Council by the Hon. Sec. of the British Dental Association to this effect:—"I am requested by the Business Committee of the British Dental Association to forward to you the accompanying opinion, and to beg you will place it before the Medical Council, together with the enclosed explanatory resolution." The explanatory resolution is as follows:—"That, in strict conformity with the practice uniformly followed of placing before the Medical Council any facts or opinions bearing upon the administration of the Dentists Act of which the Association may have become possessed, the joint opinion of Sir John Holker, Mr. R. S. Wright, and Mr. G. A. R. Fitzgerald upon the meaning of Section C, Subsection (c), be at once forwarded to the Medical Council, that the Association venture to hope the Council will cause to be placed on their minutes the accompanying joint opinion, together with the high legal opinion of Mr. (now Mr. Justice) Bowen read before the Council in July, 1880, with the opinion, also then read, of Mr. G. A. R. Fitzgerald, and that the Association earnestly hope, in the presence of a great preponderance of high legal opinion in favour of a correction of the Dentists' Register, the Council will restore to the Register the recently-erased descriptive terms 'with medicine,' 'pharmacy,' &c., and at its convenience proceed to the correction of the Register by the erasure of names registered in the midst of doubt, or take such other steps as may lead to the production of a Register legally correct." That is to say, the British Dental Association wishes this Council to erase names from the Register which the Council has placed on the Register. This letter of the Secretary of the British Dental Association was submitted to the Executive Committee, who passed a resolution to the following effect:—"That the Committee acknowledge the receipt of the foregoing communication, and inform Mr. J. S. Turner that, in the opinion of the Committee, the steps requisite to be taken to try the correctness of the course taken by the General Council under the advice laid before it rest with the Dental Association, and not, as suggested in the opinion now forwarded, by the removal of a name which, in the judgment of the Council, is registered in conformity with law." That is the opinion of the Executive Committee, but I think it is only a matter of courtesy to the British Dental Association that the Council itself should pronounce an opinion on this letter and resolution, and

therefore I venture to propose the following motion :—
“That the Council adopt the recommendation of the Executive Committee, that it rests with the British Dental Association to take the steps, if any, which may be requisite to try the correctness of the course taken by the General Council.”

Mr. SIMON seconded the motion.

Rev. Dr. HAUGHTON.—Can this motion be taken to-day? It should be put upon the agenda paper.

Mr. TURNER said, as an objection had been taken by Dr. Haughton to the appropriateness of the motion in connection with the matter before the Council, the motion was almost *verbatim* the same as the resolution of the Executive Committee which had been read. The question was a very simple one. The British Dental Association wished the Council to take action. The Council did not wish to take action, but said to the British Dental Association, “Try a case, and then when the case has been tried and a judicial opinion has been given upon it, we can act upon the judicial opinion instead of acting merely on the advice of counsel furnished to us privately.” He (Mr. Turner) submitted that that was the proper way to settle this very involved question. (Hear, hear.)

Dr. LYONS, on rising to a point of order, said he doubted whether it was within the power of the Council to suggest to another body that they should proceed to litigation. On being asked to do a certain thing the business of the Council was to say whether they would do that particular thing or not, and if they decided not to do that particular thing they should communicate an answer to that effect. It might be very desirable that a judicial opinion should be obtained, and the obtaining it might arise out of any action taken by the Council, but that was entirely different to the Council committing itself in the face of the public by suggesting that another body should commence litigation. He asked the Council to consider seriously whether such a motion fell within its province at all.

Mr. TURNER.—I recognise the objection to the motion in its original form. The question which is submitted to us by the British Dental Association, together with the explanatory resolution which they offer, requires perhaps a more direct answer than my original motion gives them, and therefore, with the permission of the Council, I will modify the motion so that it may be in the form of a direct answer to their question :—“That the Council are not prepared to take steps as suggested by the Dentists’ Association to erase names from the Register which have been placed there by the Council under

legal advice." The meaning of that is perfectly clear. It still remains for the British Dental Association to reconsider the question, and to make up their minds what they are to do. We simply say that we are not prepared to take the steps they suggest.

Mr. SIMON seconded the modified resolution.

Dr. STORRAR.—I am not going to make a speech. My speech will consist in reading the concluding paragraph of the opinion of Sir John Holker:—"We think that practically the only means of obtaining a judicial decision will be for the Council to expunge from the Register the name of some person who, according to the views which we entertain, was not entitled to be registered. The question can then be tried on a mandamus to restore the name. The Council will no doubt be prepared to give every facility for this purpose." The motion of Professor Turner is that the Council shall refuse to give facilities to carry out this recommendation, and therefore, this being the only way in which the question can be tried, it cannot be tried.

Sir WILLIAM GULL.—Did Sir John Holker advise this Council in that way?

Dr. STORRAR.—This is his opinion, and I adopt it as part of my speech.

Rev. Dr. HAUGHTON.—If I had been in communication with Dr. Storrar he could not have thought my thoughts more completely than he has done. I do not propose to press this as an amendment, but I think this is a curiosity in the shape of a suggested amendment that the Council would not like to miss hearing:—"That in order to obtain a judicial decision on Sub-section C of Section 6 of the Dentists Act, the Registrar should be directed to erase the name of M or N (following the marriage and baptismal form) from the Dental Regtster." (Laughter.)

The PRESIDENT then put Professor Turner's motion, which was carried *nem. con.*, and the Council adjourned.

(To be continued.)

Dental News.

DISTRIBUTION OF PRIZES TO THE STUDENTS OF THE
DENTAL HOSPITAL OF LONDON MEDICAL SCHOOL,
AT WILLIS'S ROOMS, KING STREET, ST. JAMES'S.

ON THURSDAY, JULY 6TH, 1882.

EDWIN SAUNDERS, F.R.C.S., Esq., in the Chair.

The CHAIRMAN called upon the Dean (Mr. T. F. K. Underwood) to read his Report for the past year, which was as follows:—

“This year fortunately I need not commence my Report with any remarks of a depressing nature which the state of things around us has forced me to do for some years past, and I am thankful to say I shall hope to show that in spite of a disturbed state of the atmosphere which makes men anxious, we have been enabled quietly to pursue the even tenor of our ways and to continue establishing and cementing the work which it is the special object of this London School of Dental Surgery to carry out. Many provincial hospitals are springing up all around us, we are glad to say, and yet we have as many students as we have room for, and their work is as satisfactory as we could wish, which I venture to submit is a very hopeful state of things.

“The number of entries last winter was extremely good—it has seldom been better—and this is an important matter, for without students the hospital could not be worked, and the poor, who are so largely dependent upon us for relief, and who are, therefore, chiefly concerned in our prosperity, would suffer. Again, I am able to report a Pass List of 100 per cent. at the last examination of the Royal College of Surgeons every one of our candidates passed, and passed *well*. With this encouraging and pleasant fact before us we should be ungrateful if we did not say how greatly this is due to the work of our medical tutor, Mr. Morton Smale; he deserves our sincere thanks for these successful appearances at the College of Surgeons. The honour of the School was largely at stake the other day, though I was not at all nervous, for our late excellent House-Surgeon and Assistant House-Surgeon were among the candidates.

"It is a great pleasure to us this year to have our kind friend, the founder of the Saunders Scholarship, which bears his name, in the chair; and the Saunders Scholar for this year, Mr. S. C. Buckland, will have the honour of receiving it from the hands of our deeply valued and generous friend. I need not describe to you how Mr. Buckland came to gain this distinction, the blue ribbon of our School, for the Prize List will explain it all. Mr. Buckland, directly he came here, began to take prizes and certificates, and I do not know when he means to stop, but this I do know, that he deserves our heartiest congratulations on his well-earned success. Our demonstrators, Messrs. Rogers and Ackery, have increased our debt of gratitude to them, if that be possible, since last year. Upon them devolves the task of personally teaching and superintending the work of each student, and if any of you could spend a morning with us at Leicester Square, and could see the demand made upon their patience and their skill, you would appreciate the difficulty I find in suitably expressing the obligations we are under to these gentlemen.

"Our late able Lecturer in Metallurgy, Mr. Louis, has resigned, having accepted an appointment abroad, and we have been fortunate enough to secure the services of Professor Huntingdon, of King's College, London. He has no prize list to exhibit, simply because no lectures were given last winter, the course having been removed to the second winter session. We have had two changes in the staff in the last year. In the place of Mr. Fox, Mr. Truman, an old student of this hospital, was elected, and our friend of many years' standing. Mr. Coleman, Chairman of the Medical Committee and Senior Surgeon, whose resignation we so deeply regret, but whom we hope to keep with us as a lecturer on Dental Surgery and Pathology for many years to come, has been succeeded by Mr. George Parkinson, who bears a deeply-honoured name among us, and one which has stood among the foremost in our ranks for very many years.

"It is right that I should take this opportunity of mentioning the valuable help the staff have received during the past year from our successive House and Assistant House-Surgeons. These posts are filled by senior students, who are selected from among the best men of their year to discharge their duties. Mr. Blackmore our late, and Mr. Hern our present, very able and efficient House-Surgeons, together with Mr. Harrison and Mr. Cornelius, our late and present Assistant House-Surgeons, deserve our very sincere and hearty thanks for the excellent manner in which they have

been, and are, carrying out the duties of their offices, and I am particularly grateful to them for the way in which they retain their popularity; they assist me in maintaining the necessary discipline.

"Mr. Buchanan, of Glasgow, still continues his generous gift to us of an annual prize of five guineas; the subject for this year you will see upon the prize list. Mr. Buchanan began to think it was time he came himself, and was most kindly intending to do so when, I deeply regret to say, illness obliged him to go abroad. The prize for Operative Dental Surgery is, this year, gained by Mr. Walter Harrison, our late Assistant House-Surgeon. The examination for this prize extends over three days, and embraces the treatment of irregularities—extractions under anæsthetics, and stoppings, and the prizeman must, therefore, prove himself to be the best man "all round" in Operative Dental Surgery. The student's prize for their own Society, this year, is gained by Mr. Hern, whom all who have been to our meetings for the last two or three years will recognise as a very brilliant man. He is by this time so thoroughly accustomed to coming up here and receiving prizes by the armful that I do not suppose to-day's ordeal will in the least disturb his equanimity in spite of his natural modesty.

"I find that with my utmost efforts to be terse, my Report this year considerably exceeds in length that of last, and, therefore, I must bring it rapidly to a close. It is a great thing it these days not to be obliged to confess to falling off, but it is very gratifying to be able to "report progress," and I trust our friends, who have shown practically their interest in our work, by coming here to-day will think that we can show a fair record of work done. Finally I beg to tender, on behalf of my colleagues and myself, our sincere thanks to those kind friends, especially the ladies, who have, no doubt, foregone many of the tempting engagements of the season to be with us to-day."

The CHAIRMAN then presented the prizes to the successful students in the following order:—Saunders Scholar for 1882, Mr. S. C. Buckland; Mr. Buchanan's Prize, for essay on "Necrosis," Mr. J. O. Butcher.

Dr. WALKER, in presenting the prize-winners of his class (Mechanical Dentistry), said he had to thank the students generally for the attention and diligence shown by them at his lectures. This was the more praiseworthy, since most of the men knew something of the subject, as the result of their apprenticeships, before they came to him, and the matter was therefore a little stale. Thirty-seven out of a class of sixty had competed for the prizes. The successful

candidates were : Mr. J. M. Ackland, First Prize ; Messrs. W. Harrison and J. O. Butcher (equal), Second Prize ; Hon. Certificates, Messrs. S. C. Buckland, A. H. Tester, and H. Baldwin.

Mr. COLEMAN, in introducing the successful students in his class of Dental Surgery and Pathology, said the answers of several of the candidates for the prizes were so good that he had great difficulty in placing them in order. He was rather glad to find that he had pitched upon almost the same gentlemen as his colleagues, since this rather confirmed the correctness of his selection. He then presented for First Prize, Mr. S. C. Buckland ; Second Prize, Mr. A. H. Tester ; Hon. Certificates, Messrs. J. M. Ackland, J. O. Butcher, R. Edwards, and H. Baldwin.

Mr. C. S. TOMES then introduced his prizemen, remarking that the gentlemen who had only obtained certificates of honour this year had gained a sufficient number of marks to have entitled them to a prize under ordinary circumstances, but the answers of Messrs. Buckland and Butcher were so exceptionally good as to have quite upset the usually accepted standard. He awarded the First Prize to Mr. S. C. Buckland ; Second Prize to Mr. J. O. Butcher ; Hon. Certificates, Messrs. J. M. Ackland, H. Baldwin, and J. Petherbridge.

The prize for Operative Dental Surgery was received by Mr. W. Harrison ; Hon. Certificate, Mr. J. J. Andrew.

Students' Society Prize, awarded for the best paper (on "Fractures of the Maxilla and their Treatment") read before the Society during the session 1881—2, was presented to Mr. W. Hern.

The prize list having been thus disposed of, Mr. Saunders proceeded to deliver an address, which will be found on page 673.

Mr. GREGSON then proposed a vote of thanks to the Chairman for presiding, remarking that Mr. Saunders had been from the first a most liberal supporter of the hospital and a generous friend to the school.

This having been given with much applause, Mr. Saunders briefly replied, and the proceedings terminated.

FIRST TRIAL UNDER THE DENTISTS' ACT.

At the Marylebone Police Court was resumed on the 5th inst. the case of Charles Smith, of 94, Praed Street, Pad-

dington, who was summoned by the Medical Alliance Association for falsely taking a name, title, or description implying that he was registered under the Dentists Act, 1878. Mr. Besley appeared to support the summons; Mr. Avory defended. At the former hearing it was shown that a Mr. Mallan, on the Register as carrying on business at 173, Praed Street, also carried on that at 94, Praed Street, under the name of "Charles Smith," by whom it had been originally established. Mr. Lushington, the magistrate who sat at the former hearing, thought Mr. Mallan's conduct unprofessional, and adjourned the summons that the Medical Council might consider the advisability of erasing his name from the Register. The Council had had the matter before them, but they could not take the same view as the magistrate, and it now appeared that Mr. Lionel Cartwright Davis, Dentist, of 140, Edgware Road (Mr. Mallan's cousin), was the informer in the case, and that he obtained the Medical Council's consent to prosecute in February last. Mr. Avory took the objection that the Medical Alliance Association were not the proper parties to prosecute, and Mr. Mansfield allowed the objection, saying there was nothing in the Act or in English law to enable Mr. Davis to delegate his authority to a third party, and he must dismiss the summons.

WESTERN BRANCH OF THE BRITISH DENTAL ASSOCIATION.

THE fourth Annual Meeting will be held August 5th, 1882, in the Cheltenham General Hospital, which has been kindly offered for the use of the Society. President, Richard Rogers, L.D.S.I.; Vice-Presidents, Thos. Cooke Parson, M.R.C.S., L.D.S.E., G. T. Parkinson, L.D.S.E., and C. Spence Bate, F.R.S., L.D.S.E.; Hon. Treasurer, J. T. Browne-Mason, L.D.S.E.

Programme.—At 11 a.m., The President's Address, and General Meeting of Members and Friends of the Association. At 2 p.m., Adjournment for Luncheon. At 3 p.m., Papers will be read on "Filling and Treatment of the Permanent Molar Teeth between the ages of six and fourteen years," by Gascoigne Palmer, L.D.S.E.; "The Retention of Artificial Dentures," by T. Cooke Parson, M.R.C.S.,

L.D.S.E. ; "Wasting of the Alveolar Process," by C. Spence Bate, F.R.S., L.D.S.E. ; a Paper by H. P. Fernald, D.D.S., L.D.S.I. ; a Paper by J. Lawes, L.D.S.I. ; "On Celluloid," by W. A. Hunt, L.R.C.P., L.D.S.E. ; "Galvanic Therapeutics with Anæsthesia," by W. V. Moore, L.D.S.E. ; "Continuous Gum Process Exhibited," by A. B. Verrier, L.D.S.I. ; "New Celluloid Apparatus Exhibited," by J. H. Gartrell, Esq. Several gentlemen have volunteered to give examples in Clinics, with the varieties of Gold Filling and Pivoting, and there will be an exhibition of improved instruments on the occasion. At 7 p.m., Dinner will be provided at the Plough Hotel. Tickets 7s. 6d. Members who intend being present will please inform, at their earliest convenience, the Hon. Secretary, Herbert Poate, D.D.S., &c., 1, Royal Crescent, Cheltenham.

The Council meet at the above Hotel on Friday, the 4th of August, at 8 p.m. Gentlemen desirous of becoming members should send their name and address before that date.—W. V. MOORE, L.D.S. Eng., Hon. Sec., 15, Princess Square, Plymouth.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

At the Examination for the Diploma in Dental Surgery, June 19th, 1882, the following gentlemen passed the Examination and received the Diploma :

Barrard, A. W. G., Putney.
 Baudry, A. F., Brussels.
 Blackmore, H. G. Canonbury.
 Curle, A. L., Hammersmith.
 Harrison, Walter, Brighton.
 Matthews, A. A., Bradford.
 Mountford, A. H., Weymouth.
 Read, H. G., Finsbury Square.
 Slate, A., M.R.C.S., Ockenden Road.

One candidate was referred.

The following were the questions asked at the above examination.

The candidate was required to answer at least one of the two questions both on Anatomy and Physiology, and on

Surgery and Pathology, and at least two out of the three questions both on Dental Anatomy and Physiology, and on Dental Surgery and Pathology.

Anatomy and Physiology.

1. Describe the palate bone and its connections.
2. Describe the branches of the third division of the fifth pair of nerves, and specify the structures to which they are distributed.

Surgery and Pathology.

1. What is the process by which union of an incised wound is effected? How can this process be best promoted?
2. What do you understand by a dislocation of the jaw? What force produces it? How would you reduce it?

Dental Anatomy and Physiology.

1. Describe the positions of the crypts of the several permanent teeth, and their relation to the roots of the temporary teeth at the age of six years. State what teeth, complete and incomplete, are found in the jaws at that period.
2. Give briefly the situation, function, and minute anatomy of the tissues named respectively—Nasmyth's membrane, membrana preformativa, and membrana eboris.
3. Give the dental formulæ of man, old-world monkeys, and new-world monkeys. Which teeth of the typical mammalian dentition are absent in them? In what respects do the teeth of the higher apes differ from those of man?

Dental Surgery and Pathology.

1. In a case of crowded teeth in a contracted arch, mention the points to which you would give attention in deciding between the extraction of teeth and the expansion of the arch. How would you effect the latter?
 2. What is meant by impaction of teeth in the jaws? Which teeth are most frequently impacted? and why?
 3. What are the causes of hæmorrhage following tooth extraction? What methods of treatment are commonly pursued, and what are their respective advantages and disadvantages?
-

The "Practical" Examination was held this time at the National Dental Hospital, and the patients were selected by the Examiners, so that the candidate had no idea what kind of filling he might have to do.

VACANCIES.

NATIONAL DENTAL HOSPITAL, 149, Great Portland Street, W.—Assistant Dental Surgeon. Applications by August 22nd. Candidates must be L.D.S.

NATIONAL DENTAL HOSPITAL, 149, Great Portland Street, W.—House Surgeon. Salary, £50 per annum. Applications by August 22nd. Candidates must be L.D.S.

Correspondence.

[We do not hold ourselves responsible for the opinions expressed by our Correspondents.]

THE PERILS OF CELLULOID.

To the Editor of the 'British Journal of Dental Science.'

SIR,—A lady patient informed me that she lost her last set of teeth by fire, besides nearly setting her house in flames. It seems that after she had worn a celluloid set for some time one of the front teeth came off, and she tried to fasten it temporarily with sealing wax (as I have known more than one patient do with a vulcanite case). In doing this she warmed the set at a flame, when to her utter amazement the celluloid at once blazed up. She immediately dropped the case on the carpet, where, according to her statement, it "burnt elegantly." Unable through fear to put out the flame, she ran out of the room for aid, when returning with two servants they found the set of teeth quite consumed, a large hole burnt in the carpet, and the wood of the floor smouldering.

This lady earnestly begged of me not to make the new set of the same material, viz. celluloid, for a *scientific* friend had informed her that the burnt one must have been made of *gun-cotton* to blaze so, and that it was most fortunate she had not been blown up by it. However, after this fact it surely behoves all Dental practitioners who insert celluloid to seriously warn their patients not to bring it in contact with fire. If this precaution is not taken we shall some day be informed that a certain house was burnt down through a set of false teeth. Trusting these few remarks may be of use as a warning,

I am, &c.,

GEORGE WARD.

Oxford Street, W.

MONTHLY REPORT OF CASES TREATED AT THE DENTAL HOSPITAL OF LONDON,

FROM JUNE 1ST TO JUNE 30TH, 1882.

Extractions	{ Children under 14	496
	{ Adults	827
	{ Under Nitrous Oxide	394
Gold Stoppings.....		226
White Foil ditto		6
Plastic ditto.....		632
Irregularities of the Teeth treated mechanically.....		121
Miscellaneous Cases.....		398
Advice Cases.....		157
Total.....		3257

WILLIAM HERN,
House Surgeon.

MONTHLY REPORT OF CASES TREATED AT THE NATIONAL DENTAL HOSPITAL,

FROM JUNE 1ST TO JUNE 30TH, 1882.

Number of Patients attended		1561
Extractions	{ Children under 14.....	482
	{ Adults.....	718
	{ Under Nitrous Oxide	88
Gold Stoppings		49
Sheets of Gold used, independent of Pellets.....		43
Other Stoppings		292
Advice and Scaling		129
Irregularities of the Teeth		93
Miscellaneous.....		246
Total		2009

FRED. WM. BATE,
House Surgeon pro tem.

QUARTERLY REPORT OF CASES TREATED AT THE DENTAL HOSPITAL OF EXETER,

FROM APRIL 1ST TO JUNE 30TH, 1882.

Extractions	{ Children under 14.....	374
	{ Adults	800
	{ Under Nitrous Oxide and Ether.....	55
Stoppings	{ With Gold.....	10
	{ „ White Foil	11
	{ „ Plastic Material	241
Miscellaneous (Irregularities of the Teeth, Scaling, &c.).....		205
Total.....		1696

HENRY B. MASON,
Hon. Sec.

To Correspondents.

1. Communications intended for insertion in the ensuing number must be forwarded to the Editor, at the Office, 11, New Burlington Street, London, W. by the 8th and 23rd of the month, and must be duly authenticated by the name and address of the writer.
2. We cannot undertake to return communications unless the necessary postage stamps are forwarded.
3. It is earnestly requested of our correspondents that their communications be written on one side of the sheet only; and we also beg to call particular attention to the importance of a carefully-penned signature and address.
All communications relative to subscriptions and advertisements are to be addressed to the Publishers, Messrs. J. and A. Churchill, 11, New Burlington Street, London, W.
5. The Journal will be supplied direct from the office on PREPAYMENT of subscriptions as under :

Twelve Months (post free)	14s. 0d.
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ANSWERS TO CORRESPONDENTS.

- MESSRS. W. HARRISON have our grateful thanks both for pointing out and supplying our omission. Errors must from time to time occur, and we always feel an obligation to those who assist to keep us accurate in statements and informed of passing events.
- R. BRADBURY.—The diploma of to-day is but the seed that it is hoped may bear good and appreciated fruit in the future. Few need expect much more advantage from it.

Communications have been received from Messrs. J. S. Amoores, W. Harrison, F. Bate, W. & J. Jamieson, W. Herne, H. B. Mason, G. Brunton, C. Ash & Sons, J. Ritchie, R. Bradbury, J. Ward.

BOOKS AND PAPERS RECEIVED.

‘Dental Record.’ ‘The Practitioner.’ ‘Deutsche Vierteljahrsschrift.’ ‘Medical Times and Gazette.’ ‘British Medical Journal.’ ‘Lancet.’ ‘Pharmaceutical Journal.’ ‘Glasgow Medical Journal.’ ‘Liverpool Dental Hospital Report.’ ‘Missouri Dental Journal.’ ‘Anales de la Sociedad Odontologica.’

NOTICE.—We desire that it may be clearly understood that our pages are open to all for free expression of their views on matters connected with our profession. We only ask for terseness of expression and MODERATION IN TONE.

When otherwise unobjectionable, difference of political or other opinion will never be regarded by the Editor as a disqualification for the admission of any communication to the pages of the BRITISH JOURNAL OF DENTAL SCIENCE.

British Journal of Dental Science.

No. 349. LONDON, AUGUST 1, 1882. VOL. XXV.

THE MINUTE ANATOMY OF THE TEETH IN THE LIGHT OF THE BIOPLASSON THEORY.*

By C. HEITZMANN, New York.

(Concluded from page 685.)

THE last question to be settled in this study was the nature of the pulp-tissue, and I dare say that to-day the character of this tissue is plain, both physiologically and pathologically. Dr. Bödecker's specimens have enabled me to say so.

In the light of the new views, Dr. Frank Abbott has studied the process of caries, and has shown that it is an inflammatory process which, owing to the scanty supply of living matter, is limited in its effect. While all tissues supplied with blood-vessels, if inflamed, produce something new, an outgrowth of new tissue, caused by increase of the inflammatory corpuscles (which are essentially the same as embryonal), in tissues destitute of blood-vessels, such as cartilage, the inflammation stops at a certain point, mere dissolution of the basis-substance takes place, the living matter reappears, but no outgrowth from that matter will occur. It has been proved that this process takes place in caries of the teeth. The first step in the process is that the lime-salts present in the meshes of the reticulum are melted out, the glue-yielding basis-substance is liquefied by means which we do not fully understand, and then the reticulum is re-established. The whole decalcified mass, still endowed with life to a certain extent, at last divides into medullary elements. Here is a stand-still, and new formation of living

* Read before the New York Odontological Society, February, 1882

matter does not take place. The soft material becomes the seat of growth of leptothrix, and represents a decayed mass, which, constantly irritating, leads to a continuance of the caries.

The next important fact, theoretically at least, is the inflammation of dentine in its middle and inner portions, inducing secondary dentine, which Dr. Bödecker has shown to be of regular occurrence with advancing age or whenever irritation takes place. He found that this irritation, proceeding from the periphery to the centre, led to a new formation of the tissue, which was proved to be secondary dentine in its three main varieties, with irregular canaliculi, with laminated structure, and structure kindred to bone.

Our specimens demonstrate that the secondary, like the primary, dentine is permeated by living matter, which, by a process of inflammation starting in the pulp-tissue, breaks down into medullary elements in globular fields or territories.

A subject which has been studied for two years in my laboratory by Frank Abbott, but which is not yet fully ripe for publication, is that of the melting of the enamel, caused by the same process which melts down the cementum and the dentine in deciduous teeth. There is in Tomes's book an illustration which shows that such a melting of enamel does take place, but, as we trust only to our own observations, we must postpone everything concerning this branch of the subject until we have trustworthy specimens. What we have seen is that a process of melting occurs on the plan of a slow inflammation; first, a liquefaction takes place in the basis-substance; afterward, decalcification, and then dissolution of the glue-yielding basis-substance. Thus the living matter becomes freed. Abbott found peculiar excavations, which are the territories of the tissue of the cementum. Kölliker, in 1874, first drew attention to such excavations on the surface of growing bone. At that time nothing was known as to the presence of living matter in cementum, and we should not be surprised that he was of opinion that these excavations and the bodies seen in them were something penetrating from the outside. So great was

his respect for these bodies that he gave them the name of "bone-breakers." Reference was made by him to the melting process in temporary teeth. What we have seen does not confirm this bone-breaker theory at all. We say that the lacteal tooth, so long as it is connected with the soft surrounding tissue, must be endowed with life; therefore, the appearance of excavations filled with bioplasson is nothing but the reappearance of the original embryonal condition. The more surprising fact is that from this newly appearing tissue filling the excavations of lacteal teeth regular bone may arise.

This is only an outline of what has been done so far. I am about to publish the results of ten years' labour in the shape of a book. I have endeavoured to reproduce all the work done in my laboratory by a number of gentlemen during the past seven years, in order to show what has been performed in America. My idea just now has been to give a mere sketch of the bioplasson doctrine, for two reasons: first, to render the future papers of Dr. Bödecker (and, I hope, also those of Dr. Abbott) clear and acceptable to you; and, secondly, to caution you against rough treatment of the teeth. Some of you have been accustomed to work upon the enamel as if it were worthless stuff—calcareous matter void of sensibility. My studies, although theoretical, I think, are of some value to the Dental practitioner, in having demonstrated that all dental tissues are alive, and I cannot believe that the removal of any part of these tissues can be done with impunity. The punishment will come, sooner or later, if you deprive the tooth of its best protector—the hard, solid enamel.

Dentine, apparently an inert tissue, reacts upon everything we do with it; a perfect revolution takes place in the dentine if you fill a tooth with any material. You have to regard the conditions surrounding the filling and the reaction which will follow upon its introduction, and much depends upon how you do your work and the material which you use as to what this reaction will be—whether beneficial or the source of new suffering to the patient.

I announced a year ago that, from my theoretical stand-

point, I should not insist upon filling temporary teeth with gold. I was misunderstood at the time. I did not mean that gold would do harm, but meant that it was unnecessary; in the lacteal teeth, so poorly provided with lime-salts, a slight protective filling does all the work one may expect.

A great many other points are attached to these new views. We know that all scientific research is at first of little practical value, but such an application of the theoretical knowledge must come without question. A great many practical questions are involved in the study of the anatomy of the teeth generally. I often say that a dozen Dentists could be kept busy for a dozen years in finding out new facts based upon the revelations of the bioplaxson theory. The interest in the subject will gradually increase, especially if the right kind of practitioners will continue to assist me as they have so successfully done hitherto.—*The Dental Cosmos*.

ACTION BY A DENTIST.

At a County Court, Mr. —, Dentist (for whom Mr. C., solicitor, appeared), brought an action against Miss — for £3 5s., the balance of £7 which she had agreed to pay for a set of vulcanised teeth. The transaction took place in April, 1880, when the defendant paid £3 10s. down, and 15s. on a subsequent occasion, since which time she neither replied to letters nor paid anything further. Miss — alleged in court that the teeth were not comfortable, because Mr. — had neglected to remove the old stumps of teeth, although she had offered to submit to any operation that might be necessary. Moreover, she contended that £5 would have been a sufficient price. Mr. —, in reply to the Judge, said he could not deny that she might have offered to submit to any operation as regarded the old teeth. Miss —, in answer to the Judge, said she was not wearing the bottom teeth, and she had told Mr. — they were useless. Mr. C. argued that the defendant had not paid as much as the value of the upper set of teeth she was wearing, and she said on a former occasion she paid Mr. — 10s. each for five teeth. The Judge gave a verdict for the defendant, on her giving up the useless set; and he remarked that though a Dentist's was a very difficult business, yet he was supposed to be a skilled person, who was bound to make the articles reasonably answer their purpose.—*Local Paper*.

British Journal of Dental Science.

LONDON, AUGUST 1, 1882.

WE ventured, in our last issue, a hope that at last it must dawn upon the Executive of the British Dental Association that their long cherished infatuation for a wholesale erasure of names from the Dental Register could not be accomplished, and we are rejoiced to see by an article in its official organ that, "So far the end of the Association has been answered. The duty of drawing the attention of the Council to what, on the highest attainable legal opinion, is believed to be incorrect registration has been discharged." We are rejoiced because we believe that the real usefulness of the Association is now about to be commenced. From the very beginning our opinions on this subject have been at total variance with theirs, but we are free to admit that they have shown steady, unswerving principle in carrying out what appeared to them to be their "duty;" and if only the same restless energy be carried into forwarding the other published objects for which the Association was formed, viz. (a) a Dental Benevolent Fund; (b) the consideration of questions involving professional conduct and usage; and (c) for any other object that may appear desirable, there will indeed be a brilliant and honorable future before it, and one the usefulness of which can only at present be dimly foreshadowed. It may thus become really the representative body of the profession, and watch over its interests, seek and guard its opportunities of advancement, and see that they are neither neglected nor turned to improper purposes. There is undoubtedly a great future before Dentistry as a profession, but there is also an immense amount of work both to do and undo before we may rest and be thankful, and not unlikely a new Parliamentary struggle and new Act

may be required before even things may be considered to have fairly settled down, and can be left to the natural development that higher and compulsory education is sure to inspire. There are some strange anomalies connected with the present Dentists Act that are sure to cripple the true development of our special science. As an instance, after passing similar preliminary examinations in arts the medical and Dental students diverge, the former to a course of *four* years' study to obtain the major degree of M.R.C.S., and the latter to a course of *six* or *seven* years' study to obtain the minor degree of L.D.S. This is so self-evidently ridiculous that in a short time it is likely to lead almost all aspirants with any ambition or pluck in them to go in at once for honour and the membership, as that also gives them full rights and better status and opportunities to practise Dentistry, and as to the remaining few years that ought to have been devoted to the practical study of the profession itself; in a vast number of instances they will probably be dispensed with altogether or only just a little of such special study attended to, and the rest will be picked up as best it may in actual practice.

This will the more probably be the future working of the Act, as no doubt when the title of *Dentist* has as respectable a sound as that of *Surgeon* and at once indicates a man of education, a great many gentlemen who have been brought up for medical practitioners will turn their abilities—especially those who have mechanical proclivities—and attention to the practice of Dentistry. There will then be more “surgeons practising Dentistry” and fewer true Dentists than even now, for those that are now thus practising are really Dentists as well as surgeons; but unless we very much misjudge events, this will not be the case in the future, there will be none of those who were real practical Dentists first and who worked as such whilst they obtained both skill and the means to enable them to study and pass for the membership of the College of Surgeons. In point of fact we believe the profession must eventually virtually, if not actually, divide into surgical and mechanical branches, and in the end except in NAME Dentistry will be very much analogous to

what it is at the present moment. The highly and expensively educated L.D.S. will be unable to accept fees that any except the wealthy or well-to-do can afford to give. The poor may obtain Dental help at charitable institutions, but the great mass of the population will still require help at prices that they feel they can pay and will *receive it*, good, bad and indifferent as they do now. The undiplomaed Dental mechanician will still make and adapt artificial dentures of from the very best to the very worst manufacture and from the very highest to the very lowest of remuneration. He will not call himself Dentist, but he will act in that capacity as heretofore, and there is no present law to prevent him. Then, again, the future country chemist will extract as many teeth as ever, he will still be the poor man's Dentist, although he will *not* call himself by that title; true, he will not be able to recover his fees, he will take good care that he does not loose many of them, and thus whilst he acts as he does now there will be no law to prevent or impede him unless he wilfully places himself within its power. Perhaps in the end the profession will actually divide into surgical and mechanical, and it may be for the benefit of both practitioner and patient, but in any case the Association has the same sphere of usefulness and importance before it, if it only aims at true and unbiased advancement and the advantage of *all* interested in the *Dentistry*.

On p. 732 is reported an action to recover fees. At all times we deprecate such actions, but in this case the Judge's remarks are important. He says, "A Dentist was supposed to be a skilled person, who was bound to make the articles reasonably answer their purpose." There appears to have been no evidence as to skill, although all means had not been tried, as the non-removal of stumps was alleged as the cause of failure. Of course a patient is entitled to all reasonable skill, but must also be expected to give all reasonable assistance. It would be a dangerous principle to make fees entirely dependent on success either in Law, Surgery, Medicine or Dentistry.

Manipulative Miscellany.

GOLD FOILS.

MESSRS. C. ASH & SONS, who have for a long time been experimenting on the manufacture of reliable gold foils, both non-cohesive and cohesive, have now produced both of a quality that they trust will be beneficial to the profession, the more especially as they feel they can ensure uniformity of excellence. We have only as yet had opportunity of trying the non-cohesive form, with which we are certainly prepossessed, as it packs softly, condenses readily, and without any tendency to "drag" on the plugger. If a strip be annealed at one end and gradually folded upon the previously packed gold, so that the annealed part comes last, the remainder of the filling may be completed with adhesive gold and built to any required contour. This gold is sufficiently tough to allow of its condensed surface being thoroughly smoothed with the edge of the enamel, and if the operation has been performed with a reasonable amount of care bears most favorable scrutiny under the microscope. A filling packed and condensed under water, after being allowed to dry, showed no sign of infiltration of coloured spirits of wine, even after being soaked in it for an hour. Messrs. Ash inform us that "some of our best operators are much pleased with it," and, without attempting to consider ourselves as amongst them, we thoroughly endorse the opinion expressed. We hope to test and be able to report as favorably of the *cohesive* foil on a future occasion.

PLUG FORCEPS FOR DIVIDING TEETH.

MR. COLLINGS, Poland Street, has manufactured a very simple but effective pair of forceps for forcing the wooden plugs between the teeth from their posterior aspects. The outer blade, which revolves on its own axis, and is therefore self-adjusting, is in the form of a **T**, so that it rests on the faces of both teeth at the same time, and at the points of contact has little pieces of lead riveted into the steel. This blade

can be reversed, and in that position will suit the slope of some teeth better. The inner blade is curved well inwards, and then returns upon itself and ends in a tiny cup or depression to rest on the plug without fear of its slipping. The power that can be exerted is very great, yet can be regulated to the greatest nicety, and so gently though certainly increased, that the maximum of division can be obtained with the minimum of discomfort to the patient.

ARTISTIC MINERAL TEETH.

MESSRS. W. & J. JAMIESON have some really artistically painted teeth manufactured by Messrs. S. S. White & Co. Those that we have seen are for celluloid work, but they are made also for other bases. They are well formed and coloured, but the chief feature of novelty is that the cutting edges of the incisors, both uppers and lowers, are, as it were, ground down with constant wear, and the centre of the ground surface, where in natural teeth, under like circumstances, the dentine would be exposed and turned brown, has been hollowed out and a dark brown streak of mineral inserted giving a most natural appearance. The masticating surfaces of the bicuspid and molars are also fairly flat and have the appearance of the interstices being filled with a little dark hard tartar. More excellent imitations of natural teeth that have done good service we have never seen, and although they are higher in cost we feel sure they should be appreciated for their artistic merit.

NEW PINK MODELLING WAX.

MR. JOSIAH RITCHIE, after lengthened experiments, has produced a modelling wax that is both pliable and tough, working well under the spatula, and easily moulded with the fingers. It is exceedingly cleanly to use, being eminently free from that unpleasant "stickiness" which is so disagreeable to the manipulator. He claims for it that it is in every respect equal to any in use, yet is but little more than half the ordinary cost.

General Medical Council.

SATURDAY, 8TH JULY, 1882.

Dr. ACLAND, President, in the Chair.

WITH regard to a notice of motion by the Rev. Dr. Haughton: "That the procedure of the Council in registering Dentists has been at variance with the opinion of Mr. Charles Bowen,"

Dr. HAUGHTON said that if he were about to press this resolution, which he was not, he would have to make some slight alteration which Mr. Miller, the Registrar, had called attention to, namely, the procedure of the Council with regard to correcting the Register of Dentists, but it was a matter of little or no consequence. Having seen the very careful opinion of Mr. Justice Bowen and knowing the high esteem in which that gentleman stood amongst his professional brethren, he (Dr. Haughton) thought it a serious thing for the Executive Committee to depart from his explicit and distinct advice. Without going into detail, as he was not going to press the motion, he would say that Mr. Charles Bowen had advised somewhat to the effect that it was the duty of the Medical Council to administer the Dentists Act according to the law, even though in some cases it might work hardship. Those who framed the Act were responsible for its shortcomings, and any strained interpretation reduced to a matter of discretion what ought to be a fixed duty, viz. to apply and administer it as part of the public law. That, as a general principle laid down by eminent lawyers, could not be disputed. Mr. Bowen's advice was to admit to the Register all those who proved that they were practising Dentistry separately from and those who proved that they were practising Dentistry in conjunction with pharmacy, his definition of a person practising pharmacy being a person practising under the Pharmaceutical Act. On all these points he (Dr. Haughton) thought Mr. Bowen was right, and he thought it was desirable to draw the attention of the Council to the fact that their proceedings were at variance with the opinion of Mr. Bowen. The Council had got an opinion from one lawyer and then an opinion from another. The Dental Association had got opinions also, and one set of opinions having been set off against the other, the result was that the Council was no nearer a settlement than before.

Mr. Bowen never expressed an opinion as to the removal of these 400 or 500 names from the Register; his opinion was that they ought not to have gone on. The question as to removing the names was a very different question to that as to putting them on. He regretted that they had been put on, and thought they ought not to have been put on, but under the circumstances he should say no more about it. He thought the Council ought in future to get very clear and well-defined advice and to act upon it once and for all. There had been a moving backwards and forwards from one opinion to the other in this matter which had led to the present difficulties. The question would remain unsettled as long as there was no decision of a court of law upon it. A suggestion had been made to him by Dr. Pitman as to whether it would not be possible to suggest to the Executive Committee to make arrangements with the Dental Association to choose a typical case and have a decision upon it. What influenced him in withdrawing this resolution was the fact that he had ascertained that the high class Dentists were practically satisfied with what had been already done by the Council in allowing the Dentists to register surgical titles. He remembered well fighting the battle with the late Dr. Andrew Wood as to whether as a matter of courtesy to the high class Dentists they should not be allowed to put on the Register their surgical as well as their Dental titles. That had been done, and he should support most cordially Sir William Gull's proposal to-day, that they should be allowed to put on the Register all their medical titles. If that were permitted it would give great satisfaction to the high class Dental practitioners, and they would not then be so anxious to have these 400 or 500 names struck off the Register. He could not press the Council to follow Mr. Bowen's advice, because that advice was opposed to the effect which Sir William Gull's motion would have, and it would not be fair to press it too strongly. He would, therefore, with the permission of the Council, withdraw the motion.

A report of the Dental Committee on the cases of John Thomas Lambert and Joseph Walker was then read as follows:

"With reference to the cases of John Thomas Lambert and Joseph Walker, referred back to them by the General Council, the Committee find that John Thomas Lambert and Joseph Walker have now answered the communications addressed to them, and that they are in the same position as regards qualification as the other persons who are on the Dentists Register, and who answered in due time the letters sent them by the Council.

"The Dental Committee report these facts to the General Council.

"HENRY W. ACLAND, *Chairman*."

Dr. PITMAN then moved:—"That the Report of the Dental Committee not having put the Council in possession of evidence to show that John Thomas Lambert and Joseph Walker were not *bonâ fide* engaged in the practice of Dentistry, the Council is therefore not prepared to order the removal of their names from the Dentists' Register." With reference to these two persons the facts were these:—They had been put upon the long list of 400 or 500 which was submitted to the Council on the 9th August, 1880, and the Council referred the matter to the Dental Committee in order that they might inquire into and ascertain the facts concerning the various cases. Measures were taken for the purpose, and a communication was addressed to the various persons by the solicitor under the instruction of the Dental Committee. The facts were ascertained and submitted to the Council, and the Council moved in the matter with regard to the great majority, but the cases of these two persons, John Thomas Lambert and Joseph Walker, were on the 29th April, 1881, referred back to the Dental Committee for further inquiry. The Dental Committee had made further inquiries with the result that was stated in the report. It was not a question whether these persons should be put upon the Register, but whether they should be removed from the Register. The two persons had been found to be in exactly the same condition as regards their claim to be registered as the large number of persons whose right to be there had been questioned.

Dr. A. SMITH having seconded the motion, it was put to the Council and carried unanimously.

The following communications with regard to Dental Students were then read:

"Edinburgh; October 31st, 1881.

"MY DEAR MR. MILLER,—As you are aware, during the autumn some questions have arisen as to the meaning of the Regulations of the General Medical Council relating to the education, preliminary examination, and registration of Dental Students. I am desirous that you should bring the matter before the Executive Committee, so that more specific regulations may be framed.

"1. In the 'Dental Curriculum,' approved by the General Medical Council, nothing is said of apprenticeship. A certificate of having been engaged four years in professional study is required. Medical students are allowed to count one year of apprenticeship as one of the four years of profes-

sional study. Ought not Dental Students to be put on the same footing?

"2. Three years' instruction in Mechanical Dentistry is required. It is not stated if these years are to be during the four years of professional study, or may be taken, in whole or in part, antecedent to registration as a Dental Student.

"3. It seems advisable, therefore, that the expression 'four years in professional studies,' should be more precisely defined. Is it to mean: (a) four years in a Dental school or hospital; or (b) may one year of apprenticeship count as one of the said four years; or (c) may one or two years passed as a Mechanical Dentist in a Dentist's workshop similarly count?

"4. May the time spent under (b) and (c) of (3) be regarded as a legitimate portion of the specified four years, even if spent before passing the preliminary examination in arts, that is to say, before registration? It seems to me only reasonable that some portion, if not the whole, of the three years to be spent in Mechanical Dentistry should be allowed, even if taken before registration, since there is nothing rendering a literary examination necessary previous to entering on workshop duties, as there is prior to entering on a course of scientific lectures; and, secondly, it will scarcely be practicable to go through an efficient training in the workshop, if during the same period the student's time is to be occupied in attending several course of lectures, and in following the practice of a Dental Hospital.

"Believe me, very truly yours,

"WM. TURNER."

Professor Turner's letter having, by order of the Executive Committee, been forwarded to the various Dental Examining Boards, with a request that they would take it into consideration and favour the Executive Committee with any observations thereon, the following communications have been received in answer thereto:

(a) From the Royal College of Surgeons of England:—

"Lincoln's Inn Fields, W.C.;

"22nd day of December, 1881.

"SIR,—I have submitted to the Council of the College your letter of the 22nd ultimo, forwarding a copy of a letter from Professor Turner in reference to Dental Students, and a copy of a resolution thereon of the Executive Committee of the General Medical Council, and requesting that the Council will favour the Executive Committee with their opinion thereon, and I am desired to reply thereto as

follows:—First, in respect of the questions raised in Professor Turner's letter under the head (a); and, secondly, in reference to the resolution of the Executive Committee under the head (β), viz. :

(a) Professor Turner's questions.

"(1) That the four years' curriculum for a Dental Student required by the regulations of the College includes apprenticeship.

"(2) That the three years' instruction in Mechanical Dentistry required by paragraph 9 of the College Regulations can be taken concurrently with the other parts of the curriculum, and be included in the four years, but not in any case before the passing of the necessary Preliminary Examination.

"(3) That, in the opinion of the Council, it is not necessary to more precisely define the expression 'four years in professional studies,' as from the College Regulations, it is believed that candidates for the Dental diploma clearly understand that the whole curriculum of professional study can be completed within the four years; that the expression 'four years' does not mean (a) 'four years in a Dental school and hospital;' that one year of apprenticeship (b) does count as one of the four years; and that two years passed as a Mechanical Dentist (c) do count as two of the four years, as it will be seen on reference to paragraphs 3, 4, 5, 6, 7, 8, 10 of the College Regulations, that the rest of the curriculum can be completed in two years.

"(4) That the time spent under (b) and (c) cannot, by the College Regulations, be considered as a legitimate portion of the specified four years, if spent before passing the Preliminary Examination in Arts, for, as has already been stated in answer to question 2, in no case can any part of the curriculum be taken out before passing the Preliminary Examination.

"(b) The resolution of the Executive Committee :

"That the Council cannot consent to admit to examination under conditions more or less exceptional candidates who have commenced the study of Dentistry since the 8th of September, 1859, inasmuch as the curriculum of professional education laid down in the College Regulations has been for many years in force, and has been required hitherto of all candidates excepting those who either had commenced the study of Dentistry or had been in practice as Dentists before the above-mentioned date.

"I am, Sir, your obedient servant,

"EDWARD TRIMMER, *Secretary*.

"W. J. C. Miller, Esq."

(3) From the Royal College of Surgeons of Edinburgh.

“The Royal College of Surgeons having received a communication from the Medical Council relative to certain points in connection with the Dental curriculum and examinations, as well as in respect to Clause 37 of the Dental Act, the President’s Council, along with the Dental Examining Board, met for its consideration, when it was resolved that the following reply should be sent to the Medical Council:

“The principal questions submitted for the opinion of the College seem to be as follows:

“(1) What constitutes ‘a year’ of professional study?

“(2) Whether an apprenticeship, general or merely mechanical, and current during such a year, shall be counted as professional study?

“(3) Whether the three years’ mechanical instruction in Dentistry, required by the curriculum, may be taken *before* or must be taken *after* passing the Preliminary Examination?

“In reference to these questions the College has to submit:

“(1) That ‘a year’ of professional study means a Winter and a Summer Session spent—*subsequently* to the Preliminary Examination—in following out such subjects as are prescribed in the Medical Council’s tabular curriculum of March 26th, 1879.

“(2) That such a year may be filled up by an apprenticeship or by a period of instruction in Mechanical Dentistry—always provided such apprenticeship or period of instruction be *subsequent* to passing the Preliminary Examination and in accordance with the prescribed curriculum.

“(3) That the prescribed period of three years’ instruction in Mechanical Dentistry, as specified in the curriculum, ought to be allowed to be taken at the option of the candidate, either *before* or *after* the Preliminary Examination. But if taken before the Preliminary Examination it should not be allowed to count as any portion of the four years’ professional study, or among the professional studies subservient for filling up these four years. At the same time the certificate of such three years *extra mural* instruction should in itself be valid, whether counting as such professional study or not.

“In reference to Clause 37 of the Dentists Act, and to the question of admitting to the Dentists’ Register and to examinations candidates whose apprenticeship terminated before January, 1880, this would appear capable of being more easily arranged were the *commencement* instead of the *termination* of such apprenticeships made the ground of admissibility. In this way the longer apprenticeship would

not be placed at a disadvantage to the shorter one, supposing both to commence at the same time and only the shorter one to terminate by 1880. The difficulty might be met by admitting to the Register and to examination *sine curriculo* all those whose apprenticeship began before 1875. The *sine curriculo* examinations, however, to be in all respects the same as for *curriculum* candidates, with the exception that no Preliminary Examination should be required. Signed in name and by appointment of the Royal College,

"JAMES ROBERTSON, *Secretary*.

"Edinburgh; December 15th, 1881."

(γ) Communication from the Faculty of Physicians and Surgeons of Glasgow :

"26th December, 1881.

"SIR,—Referring to your communication of 22nd November ultimo, I am instructed to inform you that the Council of the Faculty are of opinion—

"(1) That Dental Students should be engaged in acquiring professional knowledge for a period of four years subsequent to registration.

"(2) That of this period apprenticeship or employment in the work of Mechanical Dentistry may count for *one year*.

"(3) That of the three years to be spent in acquiring a knowledge of Mechanical Dentistry, the entire may be spent antecedent to registration.

Yours, truly,

"ALEXANDER DUNCAN, *Secretary*.

"W. J. C. Miller, Esq., B.A."

(δ) From the Royal College of Surgeons in Ireland :

"Dublin; January 14th, 1882.

"GENTLEMEN,—With reference to Professor Turner's letter, I am directed to inform you that this College has not hitherto admitted to its examination for the diploma in Dental Surgery other than gentlemen on the Dental Register, and, as at present advised, the question referred to will not arise.

"I have the honour to append, on the other side, a copy of a resolution passed by the Council of this College, from the terms of which you will see that the period of Examination, *sine curriculo*, has been extended to all such gentlemen who have had their names inserted on the Dental Register in accordance with the provision of the Dental Act. These gentlemen are entitled to every legal privilege, and seek in addition collegiate recognition, which, if worthy, they obtain after a

searching examination, and for seeking which they deserve commendation.

“ I have the honour to be, Gentlemen,

“ Your obedient servant,

“ J. STANNUS HUGHES,

“ Secretary of Council.”

“ To the President and Members of the

“ General Council of Medical Education and Registration.

“ Resolution passed at a meeting of the President and Council of the Royal College of Surgeons, Ireland, held on December 15th, 1881 :

“ Resolved :—That in order to bring the Regulations of this College into conformity with those of the two Colleges which are giving examinations, *sine curriculo*, in Dental Surgery, the Regulation by which the Dental Examination, *sine curriculo*, in this College shall cease on August 1st, 1881, be rescinded, and that in place thereof the Regulations of the Scotch Licensing Bodies be adopted, viz :

“ ‘ That Candidates whose names appear on the Dental Register shall be admitted to Examination, *sine curriculo*, and that the same be notified to the General Medical Council, together with the reasons that have influenced this Council in coming to this determination.’ ”

Mr. TURNER.—This is a matter which comes before the Council in connection with a letter which was addressed by me on the 31st October, 1881 to our Registrar. The questions raised in the letter were due to certain communications made to me by gentlemen interested in Dental education, who pointed out to me that the regulations of the General Medical Council relating to the education and preliminary examination and registration of Dental students were on some points not quite so definite as they ought to be, and that the Dental students, more especially in Scotland, were in very considerable dubiety as to whether the apprenticeship or a portion of the apprenticeship would count as a portion of the four years of professional study required from Dentists, whether the three years' instruction required in mechanical Dentistry would either altogether or in part count as a portion of those four years, and as to what the relation of apprenticeship and the term of instruction in mechanical Dentistry was to the period of registration and the passing of the professional examination. Acting on suggestions which had been made to me by the gentlemen to whom I have referred, I addressed this letter to Mr. Miller. This letter was considered by the Executive Committee and sent down to the various examining boards. The answers of those examining boards to the questions in

the letter have been read. Those answers in course of time came back to the Executive Committee, which did not itself pronounce any decision on the subject, but requested me to consider the communications with reference to devising some resolutions upon the subject, and accordingly, in conjunction with Dr. Heron Watson, two resolutions have been framed, so that we may have an opportunity of discussing the points raised. The first is:—"That a certificate of a period of one year's apprenticeship with a registered Dental practitioner, after being registered as a Dental student, may be included in one of the four years of professional study." This is merely bringing the education and arrangements for Dental students into conformity with the arrangements for medical students. Medical students are required to give evidence of having spent four years in professional study, and apprenticeship may count as one of those four years. This is merely asking the Council to affirm for Dental students what it has already affirmed for medical students, that one year's *bonâ fide* apprenticeship with a registered Dental practitioner *after being registered as a Dental student* may be included in one of the four years of professional study.

Dr. HERON WATSON seconded the motion.

Dr. BANKS thought the closer the connection was made between the Dental and medical professions the better it would be for both, and he would cordially support the motion. He knew Dentists who were men of education, graduates of the Universities, and Fellows of the College of Surgeons, and to be allowed to place those high qualifications on the Register ought, and no doubt would, meet their wishes.

The motion was then put and carried.

Mr. TURNER.—My second motion is "That the three years of instruction in mechanical Dentistry, or any part of it, may be taken by the Dental student either before or after his registration as a student, but no year of such mechanical instruction shall be counted as one of the four years of professional study unless taken after passing the preliminary examination." This motion is intended to explain the regulations, because as I understand from the teachers connected with the Dental School in Edinburgh they consider that the regulations are obscure, and they want the regulations properly defined. This resolution I think accurately defines the regulations, and if it is carried the teachers and students will know exactly what the position of the term of instruction in mechanical Dentistry is as regards the period of registration and the period of study.

Dr. HERON WATSON seconded the motion. The motion arose out of the question whether the Dental student was to

study for seven or for four years. According to one interpretation the student was to study mechanical Dentistry for three years before passing his preliminary examination, and he was then to study the scientific part of his profession for four years more. That interpretation required of the Dental student a much longer period of instruction than was required for a medical student to graduate in medicine. The resolution before the Council would set things right, and make the matter perfectly distinct both to the teachers of Dentistry and the students.

Dr. STORRAR.—As I have been spokesman on one matter for the Dentists I may say that this arrangement would be thoroughly satisfactory to the Dental Association.

Dr. LYONS said it seemed to him that the first part of the resolution was gratuitous, and an entirely unnecessary statement to make. The resolution in the first part stated that the Dental student might do something which he did not want authority from the Council to do, nor was he offered any advantage if he availed himself of the permission which was there given him. It appeared to him (Dr. Lyons) that the Council would be legislating in the direction in which it wanted to legislate if the first part of the motion were omitted.

Dr. WATSON thought Dr. Lyons had hardly apprehended the statement which had been made. The difficulty arose from the ambiguity of the regulation as to what relation the three years of mechanical instruction was to bear to the four years of professional study. On the one hand, it was argued that the four years' professional study should be left wholly unoccupied by mere mechanical work, so that the student might devote his undivided attention to subjects of a scientific kind; on the other hand, it was urged that it was a great hardship in the case of many students that they were not able to combine mechanical instruction with scientific instruction. It seemed to him that the motion solved the doubt which existed in the minds of both the students and teachers and also the examining boards, and therefore although it might at first sight appear tautological, it really had an important bearing on the question which had been raised.

Dr. A. SMITH thought, as Dr. Watson had explained why the motion was made, the Council should be very explicit, so that both the teachers and students should understand. Standing as the regulation did it would be a great encouragement to students to take as much mechanical education as they could get, but if they were told they could only get so much as took place after their registration counted as part of the curriculum of four years, it would not have that effect.

Mr. TURNER, on the suggestion of Dr. Pitman, then varied his resolution by substituting for the words at the end:—"passing the preliminary examination," the word "registration."

Dr. LYONS thought what was attempted to be conveyed was that it was desirable that students should have at least three years of instruction in mechanical Dentistry. To affirm that would be a very suitable proposition.

Mr. TURNER.—That is already a regulation.

Dr. LYONS.—Then you really do not want this part at all. I should not press this, but I have analysed it very carefully, and I am perfectly certain I am right. If that has been affirmed before then you do not want it at all; if it has not been affirmed I think you might say, "That it is the opinion of the Council that three years' instruction in mechanical education shall be taken by the Dental student," and then make the second part a separate resolution. By inserting the word "registration" Professor Turner has made his point much more definite, but at the same time I hold that he has more pointedly and conclusively shown the absurdity of the first part as it stands. I move as an amendment that the first part shall run thus:—"That this Council is of opinion that the period of three years of instruction in mechanical Dentistry should be spent by the Dental student," and then the second part can stand as it is. The effect of that would be that the Dental student would register in the first instance, and you would from the very beginning of his career have a definite control over him; you would have full information as to his conduct; and you would bring him, as you do medical students, within the purview of the Council.

Rev. Dr. HAUGHTON.—I will second the amendment for the purpose of having my muddled views cleared up by Professor Turner. I do not understand what the point is.

Dr. HUMPHRY thought the Council could not do better than adopt the following:—"That the prescribed period of three years' instruction in mechanical Dentistry, as specified in the curriculum, may be allowed to be taken at the option of the candidate either before or after the preliminary examination, but if taken before the preliminary examination it should not be allowed to count as any portion of the four years of professional study." That was what was meant.

Dr. LYONS.—That is open to the same objection.

Mr. TURNER thought Dr. Lyons and Dr. Haughton had both failed to apprehend the point. The question was not whether a student should have three years' instruction in mechanical Dentistry: that was settled long ago and formed part of the curriculum of all the bodies. The candidate

must produce "a certificate of having had instruction in mechanical Dentistry during three years by a registered practitioner." That had been sanctioned by the Council, and they had no need to reaffirm that. The point in question was when this three years of mechanical instruction had to be taken—whether before or after registration, or partly before and partly after. What was suggested in the motion was that the three years or any part of it might be taken by the student either before or after his registration as a student, but with the proviso that no year of such mechanical instruction should be counted as one of the four years of professional study unless taken after registration.

Mr. SIMON asked whether Mr. Turner's intention would not be more accurately expressed by the words "Instruction in mechanical Dentistry taken before the preliminary examination shall not count as professional study."

Mr. TURNER.—No; that does not entirely cover it. I submit that this motion entirely covers the whole question, and therefore I shall not withdraw it. (Hear, hear, and Vote, vote.)

Rev. Dr. HAUGHTON.—There is some mystery about Dentistry in every direction. I cannot understand it.

Dr. Lyons' amendment was then put and lost, only one hand being held up in favour of it, a result which was noted amidst loud laughter.

The original motion was then put and carried.

Sir WILLIAM GULL said that, before moving "That any or all of the qualifications in Schedule A of the Medical Act be registrable in the Dentist's Register," he should like to say a word of explanation. Yesterday he considered it his duty to lay before the Council his thoughts as to the propriety of making the Council an administrative body in respect of midwives. Considering that he served with Mr. Simon on a former committee, and that they were not represented on the present committee, and that there was no registration of the views of the minority, it seemed to him, and he believed Mr. Simon agreed, that they had the right as Crown nominees, if they thought it desirable, of more or less privately laying before the Government their entire views about this question apart from the Council. He intimated this intention so that if afterwards it should appear to the Council that they had taken such a step, it should not be said that they had done so without informing the Council. Considering the future of this Council or its probable future, and considering the great interests of the profession which were involved in the matter, the conviction on his mind and that of Mr. Simon was that they would not be doing their

duty to the Government if they did not take an opportunity of fully laying before it their objections to the resolutions of the Council.

Dr. QUAIN said as one of the Crown nominees he did not think with Sir Wm. Gull. He hoped Sir Wm. Gull would be especially careful to speak in his own individual capacity and not on behalf of the Crown nominees generally.

Sir WM. GULL.—We should not speak in any other names than our own. We may not think it desirable to take any steps, and we should not do so without duly informing our colleagues.

We now come to a matter which was discussed in this Council a year ago, viz. whether the Dental Register should contain any other qualifications than Dental qualifications. It will be in the recollection of the Council that Mr. Bowen advised that this Council could not or should not enter on the Dental Register any qualifications other than Dental qualifications. Now I must be allowed to demur to that, because if you look to the Dentists Act Section 11, Sub-section 6, you will see that we have entire power to do this. That section runs thus:—"The General Council may if they think fit from time to time make, and when made revoke and vary, orders for the registration in, on payment of the fee fixed, and orders for the removal from, the Dentists' Register, of any additional diploma, membership, degree, letter, or license held by persons registered therein, which appear to the Council to be granted after examination by any of the medical bodies in respect of a higher degree of knowledge than is required to obtain a certificate of fitness to practise under the Act." Mr. Bowen said that all these diplomas, memberships, degrees, licenses, or letters had relation to Dental Surgery, but if you read the Act further you see that that could not have been the case, because it says "to be granted after examination by any of the medical authorities." Now the College of Physicians and the University of London are medical authorities, but medical authorities not having anything to do with Dental Surgery. I think that that answers the question. We can register degrees, diplomas, licenses, or letters that have nothing to do with Dental Surgery but which indicate a higher degree of knowledge. It does not say a higher degree of knowledge in Dental Surgery, but it includes the degrees, diplomas, and licenses of all medical authorities, so that we have the power of registering all the diplomas, degrees, licenses, or letters from the medical authorities in the Dental Register. Therefore I think we have the power, notwithstanding the opinion which Mr. Bowen has given.

Having the power, I think we ought to exercise it on two grounds: first, *pro bono publico*, because I think it is very desirable that the public, when they look at the Dental Register, should see the full status of the people who practise Dentistry, and, secondly, because it will tend to encourage the people who do register to attain a higher degree of education and raise the level of the Dentists' profession. On those grounds I venture to suggest that it will be for the good of the public and the good of the profession if we allow the Dentists to register their additional qualifications.

Dr. STORRAR seconded the motion.

Rev. Dr. HAUGHTON.—If Dr. Storrar had not seconded the motion I should have done so myself. In speaking to high class Dentists I have found that the sore point with them has been that the Council has not permitted an additional column for these additional qualifications to be added to the Register. If their desire in that respect had been acceded to there would have been no objections raised by them. They naturally want the public to be able to recognise the high position which many of them occupy. Many of them are graduates of universities, and they are all dissatisfied that it does not appear on the Register whether or not they are merely Dentists. By a recent decision of the Council the surgical qualifications recited in Schedule A of the Medical Act were permitted to be entered on the Dentists' Register. That was a step in the right direction. I think the Dentists who have higher titles are entitled to differentiate themselves from the barbers and others on the list. I support entirely and completely Sir William Gull's motion. I withdrew a resolution which I had put on the notice paper about the action of the Council in registering Dentists, being at variance with Mr. Charles Bowen's opinion, in the hope that Sir William Gull's resolution would be carried. I think it is very desirable if barbers and sham apothecaries have got on the Register that good men should put their higher qualifications on the list. I think the strong feeling that there is in the Dental profession will be satisfied if Sir William Gull's motion is carried.

Dr. QUAIN.—I have a word to say about the Dentists, and I earnestly hope that this will be the last time that the Dentists' question will be brought before us. We have had more trouble in the last two or three years with the Dentists than we have had during the whole of the twenty years since I have been a member of the Medical Council. Twice we have been summoned here to meet specially about it. Four times we have altered the Register, and this will be the fifth change we have made in the Register. Why? Because we have not adhered to the law. I am not going to oppose

Sir Wm. Gull, but I shall not vote for his motion, because it will be utterly inconsistent, in my opinion, to vote against the advice seriously given by our own legal adviser, who says he is of opinion that Section 11, Sub-section 6, only gives power to register higher qualifications in Dentistry, and that the knowledge referred to in the clause appeared to him to be confined to knowledge in Dentistry. Sir Wm. Gull has said it is higher knowledge generally. Within the last half hour we have been voting for three years' mechanical instruction in Dentistry. I would infinitely prefer a Dentist who had spent three years in the mechanical practice of Dentistry than a graduate of any university who had not spent that time in Dentistry. In all probability a Master of Arts or a Doctor of Medicine would be just as likely to be a bad Dentist as a good one. I pointed out the difficulty to a legal gentleman, and he said, "Oh! Sir Wm. Gull is only going to show the absurdity of the whole thing." Sir Wm. Gull said that the College of Physicians and the University of London had not put on their surgical qualifications. They have both a perfect right to confer surgical licenses; there is no difficulty about that. I am not quite sure whether the Registrar did not appeal to the President, if not to a higher authority, whether he was to register the diploma of the College of Physicians. But I am going a little deeper into the question. I believe this Council is creating a most dangerous class, viz. a class of partially educated medical and surgical practitioners. That is what is staring us in the face. I will not trouble the Council by repeating the arguments again, but recently at a meeting of the Odontological Society there was a discussion as to how far the Dentists should undertake the constitutional treatment of disease. There was a long discussion upon what was the best treatment for neuralgia. Some of the eminent Dentists said, "You are going into the constitutional treatment of disease; that ought to be left to the medical profession;" but the others said, "Oh, no; we are quite qualified to deal with that." Then a Dentist removes a tumour from the jaw, and he says, on being questioned about it, "I don't see any objection to it." I do not object to these licenses or degrees being put on the Register; they will constitute a very small minority of those who are on. Might I ask what is the proportion of those who have added licenses or degrees to their Dental qualifications to the whole body of registered Dentist?

MR. MILLER.—I could not say exactly; it is a small number.

DR. QUAIN.—There are about 60 to 5000, I believe.

What will be the result of that? Those gentlemen who are on the Register with the licenses of the Colleges of Physicians and Surgeons will find that those who have not got those qualifications will be their rivals, and they will find that there is nothing to prevent the others from treating patients for diseases of a medical and surgical character. Those men will compete with the higher class men, and undertake the constitutional treatment of disease. I say we have blindly created a class of partially educated practitioners which will give in the future enormous trouble. We ought to have guarded against it by a clear definition of what Dentistry meant. That will be the result of our proceedings, to create a class of people who will think themselves fully competent to treat disease constitutionally in every sense of the word.

Mr. MILLER.—Turning to the Dentists' Register I find that there were fifty-eight Dentists registered with the surgical qualifications to which reference has been made.

Dr. QUAIN.—If we are aiming at giving the public, as Sir Wm. Gull said, the advantage of knowing those Dentists possessing a higher knowledge, I would say that we are not doing it thoroughly, because they cannot register the highest foreign diplomas. Surely that is so, because the highest foreign diplomas would not come within the motion. A man might be a graduate of the highest foreign university, but he could not put his degree on the Register, and that is a great injustice to him. He has a legal qualification to practise Dentistry, but he cannot register his higher qualifications. From first to last the Dentists Act has been the source of infinite trouble, and I believe that it is likely to do very little good for the Dentists or for the public.

Mr. TURNER.—I have an amendment first of all to suggest for Sir Wm. Gull's consideration. I am with him generally, but I cannot go quite so far as he proposes, because I have a difficulty with reference to bodies like the Apothecaries' Society. According to Sir Wm. Gull's motion, I apprehend it would cover registration of the L.S.A. I have a difficulty about that because I do not think that could be read altogether as a qualification which represents a higher degree of knowledge. I have my doubts about that. At this present time we have the power of registering surgical qualifications, such as fellowships and memberships of a college and degrees in surgery, but that does not go quite far enough for Sir Wm. Gull. I would suggest this amendment because if it were approved of it would remove my difficulty as regards the Apothecaries' Society: "That any or all of the qualifications in Schedule A of the Medical Act

granted by any of the medical authorities who have power to hold examinations for testing the fitness of persons to practise Dentistry or Dental Surgery, and to grant certificates of such fitness, be registrable in the Dentists' Register." I mean those who have power to do it, not those who do it without power. That will cover the Universities' degrees.

Dr. QUAIN.—Where does that cover the Universities' degrees?

Mr. TURNER.—I will refer you to the exact section of the Act. It is the 18th; in fact, the phraseology of my amendment is largely taken from that section.

Sir WM. GULL.—That will not do, because we have discussed here whether Dentists do not require to know more than surgery, and whether medical knowledge was not as valuable in Dentistry as mere mechanical knowledge.

Professor TURNER.—The difficulty with regard to the Apothecaries' Society and the others is this, that they are not all surgical examining bodies.

Sir WM. GULL.—No, but they are medical examining bodies. The family practitioner is essentially a man who treats medical ailments.

Professor TURNER.—It seems to me, with regard to those medical authorities who confer these medical degrees, licenses, or letters, as stated in Sub-Section C, p. 12, that it is contemplated that they should have some relation to the subject of Dental Surgery.

Sir WM. GULL.—Not necessarily.

Professor TURNER.—That is one of the difficulties in this Act arising from the obscurity in which the meaning is very often left. The point is this, that whereas Sir Wm. Gull's motion is entirely an open motion to embrace everybody, this amendment, which I am more or less suggesting for consideration, is not quite so open: it only takes in those bodies which have power to hold examinations for testing the fitness of persons to practise Dentistry or Dental Surgery, and grant certificates of such fitness. I will just table that and move it as an amendment for discussion.

Mr. MACNAMARA.—That would not satisfy me at all, nor do I think it would guide us to where Sir Wm. Gull would wish to guide us, and where, I think, we shall be willing to follow. I should like to take the Council back to Section 11. "The General Council may, if they think fit, from time to time make, and when made revoke or vary orders for the registration in (on payment of the fees fixed by the orders), and the removal from, the Dentists' Register of any additional diplomas, memberships, degrees, licenses or letters held by a person registered therein which appear to the Council to be

granted after examination by any of the medical authorities in respect of a higher degree of knowledge than is required to obtain a certificate of fitness under this Act." That is, any of the medical authorities. Then on page 14 the conferring of degrees in Dentistry is strictly limited to bodies capable of giving surgical qualifications. So that I may read that which was quoted so accurately by Sir Wm. Gull from page 12, "any medical authorities" as meaning that any of the medical authorities may confer qualifications, and if those qualifications show a higher degree of fitness under the other clause, they are capable of being inserted on the Register. A great deal has been said about Lord Justice Bowen's opinion, but after all I think educated men ought to be able to interpret the English language, and I would not pin my faith, altogether, to what would fall from a lawyer when it was diametrically opposed to my own common sense. With regard to the question of L.S.A., to which Professor Turner has alluded, I say that any Dentist who is on this Register and who subsequently goes to the Apothecaries' Hall of England or Ireland will get an additional and higher degree of information than he possessed when he was qualified to get on this Register; and although Dr. Quain has alluded to the fact that the College of Physicians have the power of conferring surgical licenses, I do not know that the College of Physicians in Ireland is entitled to give a surgical license, and I am very proud to hold this opinion, inasmuch as I have the honour of holding the degree myself, obtained after examination, and I look on the licentiateship of the College of Physicians of Ireland as representing a higher degree of education than would be conferred from the fact of a man having passed an examination in Dental Surgery. After all, what should be our aim? Is it not to raise in every way that we can the status of the Dental profession and make Dentists a more respectable body of practitioners? (Cheers). And unquestionably, though Dr. Quain says he would prefer going to a man who had not passed any medical or surgical examination, for the purpose of treating his teeth, I have seen so much misfortune fall upon patients who have gone to those purely mechanical Dentists; I have seen cases where so much injury has been inflicted on patients from ignorance of medicine and Surgery; that I would wish to encourage Dentists as much as possible, in obtaining an additional qualification, which they would be encouraged to do by the knowledge of the fact that the additional qualification would be registered here; and from which they would be discouraged if they were able to say to themselves "*Cui bono*, this or that qualification that I have studied to get, and spent so much

money in getting, when it will not appear afterwards on the Register? (Applause). It has been said, "Oh yes, it will appear here on the Medical Register." Yes, true; but if a man wants to consult a Dentist he does not go to the Post-Office Directory, nor does he go to the Medical Register, to look for a qualified man: he goes to the Dentists' Register, and when he sees a man with such qualifications as many of our Dentists have—Fellowships of the Royal College of Surgeons in Ireland, not mere Licentiates—when he sees some of them with M.D. of the University of Dublin or of the Queen's University written after their names, he knows that he has found an educated man, and the probability is that in virtue of that education he is a more responsible and respectable man, and one in whom the public would be entitled to place more confidence. I am very much pleased at the motion which has been brought forward by Sir Wm. Gull, and all I trust is that he will not on any account—no matter from what quarter the suggestion comes—allow it to be emasculated. (Cheers.)

Dr. LYONS.—I wish to say one word in regard to the amendment proposed by Professor Turner, which has the effect of limiting the class of colleges whose qualifications it would be possible to put on the Dentists' Register. It appears to me that Clause 6, Section 11, is in a sense mandatory. It is one of those cases in which "may" must be read to mean "must." "The General Council *may*, if they think fit, from time to time make orders," &c. Now in that case the term "medical authorities may" seems to have been used in a general sense, but you will not find on looking at the Act that the term "medical authorities" is strictly defined. And if you turn to the very first page of the Act you will find it is clearly laid down in Clause 2 that the "medical authorities" means bodies and universities who choose the members for the Medical Council. That seems to define as clearly and accurately as is possible what the medical authorities in Sub-section 6 of Clause 11 are, and it appears to me that we have almost no option under that clause, and the definition clause showing what "medical authorities" means in the second clause of the Act. You will find that in Clause 2 "medical authority" is used to define what may be done by the medical authorities. As to Clause 18 and the restricted interpretation which in Professor Turner's view that seems to bear (but you must bear in mind that this is not the clause dealing with registration at all) it defines the way in which the Act may be carried out; and it very properly does not leave to all medical authorities the power of carrying out the matter

for Dentists; but it defines those which deal with cognate subjects with Dentistry, as for instance, those bodies who are fit to conduct surgical examinations. That clause was a clause providing for examination: it has nothing to do with registration. Taking the interpretation of the term "medical authorities" as given in Clause 2, I do not think, on a common sense reading of it, there can be the slightest doubt that this, if not compulsory, is the next thing to mandatory upon us, by the use of the term "may," which in a case like this means "shall"—*shall* "register those higher degrees, licenses," and so forth, "which appear to the Council to be granted after examination by any of the medical authorities." That clause is widely drawn for the purpose of including any qualifications which may be given afterwards on examination; but if any medical authorities chose to give qualifications without examination, such qualifications would not be registrable. I am one of those who regret that this Act in certain of its clauses was not drawn in a more stringent way, and I go very much indeed with Dr. Quain in the expression of regret that it has been found possible under the last clause of this Act to register persons who pursue other than a strictly professional calling. That is a lamentable condition of things: it is one of those things to which we ought to direct our attention with the view to have it cured in the future. But we have been informed on authority that we should not neglect that we must register those persons, whether painters or glaziers or whatever they are, who in the eye of the law practise Dentistry and have qualifications. That I regret; but it is not because one regrets a certain class of men have got in through a back door into a professional body that we are justified in neglecting another portion of the Act which is clearly mandatory as to what we ought to do in another and a better cause. The very fact that we are obliged to obey the mandatory Act in regard to these persons is the best argument for enforcing the terms of those clauses which enable us to do, and as I contend almost compel us to do, that which is a good thing in itself. In regard to the policy of the Act, I should say it is extremely likely that this very clause was contemplated with the view of marking out and classifying those persons who had a superior kind of education, and who occupy a superior scientific and professional position as compared with those who in the general contemplation of the Act must be admitted because of the practical difficulty of distinguishing between a person of the highest education and a person of the lowest education—between a person of the highest professional character and standard and a person

who makes use of the colour of a professional qualification to earn money, and at the same time pursues a trade or occupation of some kind. I hold that under the Act we have no option, and I think any one with a superior qualification demanding to be registered could compel us under mandamus to register his qualification. I think also the policy is so desirable that it is only right and proper that we should do what we are empowered to do by the Act. That we are empowered to do it by the Act there cannot be a question by any candid mind that reads the Act and applies it to the conditions before us. Therefore I gladly support Sir Wm. Gull in this motion, but at the same time I go strongly with Dr. Quain, and if ever the opportunity arises I shall certainly be very happy to lend any assistance I can in another place to remedy the Act so as to exclude those persons who are mere tradesmen in one sense, and who come in under the shelter of a loosely drawn Act, and pursue a calling which belongs to other persons. (Applause).

Dr. BANKS.—I shall not say one word on the legal aspects of this case. I have not the experience of my friend, Dr. Lyons, with Acts of Parliament. I merely rise to give Sir Wm. Gull's motion my most hearty support. I know the highly educated "gentlemen" class, and I know the low class in this so-called profession. Now, I would ask the Council to pass this resolution of Sir William Gull's first, because I think it is an act of common justice to the educated gentlemen among the Dentists. I have not been convinced by Dr. Quain's argument. I believe that a man being a graduate of a university there is no reason why he should not be a good Dentist as well. I think there is a strong reason why in his dealings with the public he should be influenced by feelings of a better order than probably the man who is, so to speak, a tradesman. (Applause.) I think we owe it, then, to those gentlemen who have secured a higher grade in the profession, to provide the means of distinguishing between the high class Dentist and the man who follows his calling as an ordinary trade.

Mr. SIMON.—It appears to me that I must support Sir Wm. Gull's motion on the ground that what he actually proposes to do follows almost of necessity what the Council has already done. And if that were all, I should vote for it: yet I cannot vote for it, because in the face of the legal opinion we have received I believe we had no right to do what we did. I know there are some gentlemen round this table who are inclined to act upon the old saying, "In for a penny in for a pound." That may be the view of the majority of the Council, and I do not mean to say

there is nothing to be said in favour of that view. It does not appear to me that what Sir Wm. Gull proposes is at all inconsistent with what we voted before: in fact, it rather appears to follow from it, but that was voted against the written opinions of counsel and against the advice of our solicitor then sitting on the right of the chair. Against that, on the motion of my friend, Dr. Storrar, the resolution upon which the Council has since acted was carried, but the resolution restricted it to surgical authorities, and if there had been no legal difficulty in the matter I should have said: But why restrict it to surgical authorities? If all sorts of medical knowledge and knowledge in which medical authorities examine is to be counted, count midwifery, count pharmacy, count any of the matters on which examination is held; but certainly count medicine, seeing that if all truly medical knowledge is to be taken into account in your Dentists' Register, it may be of importance to the public that the Dentists shall have the kind of education that physicians possess in addition to that Dentists have. I should have been quite prepared to admit that, except that I found we were advised by our legal advisers that "knowledge," in the clause which has been referred to, means Dentistic knowledge, and that certainly was my reading of it. I knew the history of the clause, and I knew that that was the intention of the words, whatever their legal meaning might be. I knew quite well, and there are others here who knew, that the intention of the clause was to give the authorities, who should examine in Dentistry, power to examine in higher subjects relating to the teeth, and to confer higher qualification.

Dr. STORRAR.—I do not know how Mr. Simon learned that that was the intention.

Mr. SIMON.—I saw the clauses drawn myself, and I know that to have been the intention. Whether that was the intention of the gentlemen of whom Dr. Storrar is thinking I cannot say, but at all events we were informed that that was the legal meaning of the words, and in the face of that the Council inserted the surgical qualifications. Well, if we insert surgical qualifications, I see no reason why we should not insert medical qualifications, as Sir Wm. Gull proposes. I cannot vote for it because, I feel myself entirely debarred by the legal opinion of our advisers, and I will not vote on this Council against legal opinions given to the Council. But, as I said, on the principal of "In for a penny in for a pound," if any gentleman around me likes to be illegal, let him that was illegal be illegal still. (Laughter).

Dr. AQUILLA SMITH.—I think there is not a great deal of

difference between Sir Wm. Gull's motion and Professor Turner's amendment. The principle of admitting additional qualifications into the Register is already established. The main objection to Sir Wm. Gull's motion is that it contains the words "all medical authorities." That would admit a Dentist on the Register in regard to his license in midwifery, if he had one, from the Royal College of Surgeons, London. I do not think Professor Turner's motion limits the qualification to what I think is a proper limit and more consonant with the legal opinion of Lord Justice Bowen. I have no objection at all to a Dentist adding his qualifications with the restriction which Professor Turner proposes, and I think it is important to the public, because that Register we all know is encumbered with a great many names the public have no confidence in, and we know that they ought not to have been there. Dr. Lyons spoke of a large number getting in by the back door, but he appears to have forgotten that the back door has been now shut, and the barbers and hairdressers can no longer get in. Dr. Lyons also spoke of Sub-section 6, Clause 11, being mandatory on the Council, because, he says, "may" means "shall;" but I find the words are, "The Council may if they think fit." Now, that must prevent it from being mandatory, and clearly proves that the Clause is permissive. It was only the other day in the case of Mr. Murdoch that we exercised the privilege conferred by those very words "if they shall think fit," and refrained from striking his name off the Register. Therefore, if the words are permissive in the one case they must be taken to be permissive in the other. I shall support Professor Turner's amendment, because I think it does everything that is wanted. The great advantage is that this Register being encumbered with so many questionable names the addition of surgical qualifications from bodies entitled to confer them is quite sufficient, and would be a great advantage to the public, because they will say at once, "This man is not only a Dentist, but he has got a good qualification," and they will thus be able to distinguish the high class professional men from those who have got in at the back door. I look upon that as being a most important thing. Dr. Quain said something about the necessity of a Dentist being qualified for constitutional treatment. I do not think it would be worth while to introduce medical qualifications purely upon that view. I take it that a gentleman who claims a license as Dentist from the Royal College of Surgeons would, from the education he has received as a surgeon, be fully qualified to conduct any constitutional treatment connected with

Dentistry. I have much pleasure in supporting Professor Turner's amendment.

PROFESSOR HUMPHRY.—My position is precisely that of Mr. Simon's. I thought it extraordinary on the part of the Council to act in the teeth of the only legal opinion they had, such legal opinion being to the effect that the power of the Council was simply to register degrees in Dentistry. But, as Mr. Simon said, one may as well be hung for a sheep as for a lamb, and I quite admit that having departed from what I conceive to be our legal position we may as well go on. (Hear, hear, from Professor HAUGHTON.) At the same time I shall not vote for this, and I shall not vote at all, because I think the whole thing is an illegal transaction. We have taken our lawyer's opinion, and we have taken our counsel's opinion, and they were both distinct upon the point that this clause does not give us the power; and, nevertheless, in spite of that we did it—for some good reason I suppose—and having done it I think we may as well go on. (Laughter.) With regard to Dr. Lyons's idea of its being compulsory, I cannot consent to that for a moment, because the first clause says, "May if they think fit;" and, secondly, the words are, "any additional diplomas which appear to the Council to be granted," and so forth. So that it is clear there is nothing compulsory. It is evident the Council may do as it likes; indeed, if Dr. Lyons's view be correct this Council must insert every degree in theology which a Dentist may hold.

Dr. LYONS.—Allow me to remind Professor Humphry that medical authorities do not grant theological degrees.

Professor HUMPHRY.—Yes, but they do. The University of Cambridge is a medical authority, and I think you will not deny that the University of Cambridge confers degrees in theology. (Cheers and laughter.) And if Dr. Lyons's view is correct this Council is bound to register theological degrees conferred by the University of Cambridge.

Dr. LYONS.—It says "of fitness."

Professor HUMPHRY.—Fitness in what? Does it mean fitness in Dentistry, then?

Dr. LYONS.—Yes. (Loud laughter.)

Professor HUMPHRY.—Then that is entirely my view—it ought to be confined to Dentistry. (Cheers and laughter.) If you open the door the Council must register degrees in theology, but that does not really follow upon Sir William Gull's motion—his motion is limited, and I confess that taking that view I would support it in preference to Professor Turner's amendment, for I do not see any reason for excluding any one of the bodies, because clearly under the

view the Council has taken the diploma of the Society of Apothecaries or any other of the bodies is "a higher degree of knowledge." We have simply substituted the word "additional" for "higher." The Act says "a higher degree of knowledge."

Dr. PITMAN.—Professor Turner's amendment is strictly limited to the registration of surgical qualifications. Sir William Gull's motion would add medical qualifications. Dr. Lyons has endeavoured to interpret the Act of Parliament, but he has omitted, in my opinion, one very important clause, which would assist us in coming to a conclusion as to what are the different qualifications of a higher degree of fitness. Now, I think one clause of an Act of Parliament will very often interpret another, and if you look at Clause 3 of the Act of Parliament it says this: not that a person who holds a medical qualification can with that qualification get upon this Dentists' Register, because this is a register of practising Dentists; but it says in order to show what his higher qualifications are a person who holds a medical qualification may put "Dentist" on his door and may act as a Dentist, although he cannot get put on the Dentists' Register. Then this clause says:—"From and after this 1st day of August, 1879, a person shall not be entitled to take or use the name or title of 'Dentist' (either alone or in combination with any other word or words), or of 'Dental practitioner,' or any name, title, addition, or description implying that he is registered under this Act, or that he is a person specially qualified to practise Dentistry, unless he is registered under this Act." Then what comes after:—"Any person who, after the 1st day of August, 1879, not being registered under this Act, takes or uses any such name, title, addition, or description as aforesaid, shall be liable, on summary conviction, to a fine not exceeding twenty pounds, provided that nothing in this section shall apply to legally qualified *medical practitioners*." Now, a legally qualified medical practitioner, though not upon the Register, may call himself a Dentist and may practise Dentistry, and that to my mind interprets the subsequent clause of the Act and shows what was intended by the term "higher qualification." It is needless to go farther than that, but if you look to the Register itself (p. 14) you will see "Frederick Comfort, Licentiate in Dentistry of the Royal College of Surgeons, England." Then comes afterward "additional qualifications." "Member of the Royal College of Surgeons, England, 1871; Licentiate of the Royal College of Physicians, London, 1872." Well, it is not necessary to have all these instances of licentiates of the College of Physicians having registered their

titles. Whether it is right or wrong is another question, but there it is, and why should not licentiates of other colleges have their qualifications registered as well? I would go with Sir William Gull, but in his motion he has not carried out what he proposes; because although we wish every registered Dentist to put every additional qualification which proves a higher degree of knowledge on the Register, we do not want a medical qualification alone to enable him to be put on the Register. But he says that any and all of the qualifications in Schedule A of the Medical Act be registrable in the Dental Register, so that anybody who comes with the Apothecaries' Hall license and says "I claim to be put on the Dentists' Register," would be entitled to claim registration.

Sir WM. GULL.—I propose to insert the word "additional."

Dr. PITMAN.—"Be registrable by registered Dentists on the Register." (Hear, hear.) I think some words to that effect should be inserted to prevent a man getting on the Dentists' Register without any Dental qualifications.

Dr. STORRAR.—As the seconder of Sir Wm. Gull's motion, I should like to say a word. His motion is simply the latter half of a motion I made last year. I cut it in two and confined my motion then to surgery to meet the views of Professor Turner. I wanted something done in this direction, and if I could not get all I was willing to take a part. In the course of discussion Professor Turner rather came to see the case as I did, but inasmuch as the debate had gone on upon my amended motion, I was content to leave the division to be taken on the admissibility of the surgical qualifications. Sir Wm. Gull then gave notice that at the next meeting (this meeting) he would bring forward a motion for the admission of medical qualifications, and I seconded that, as a matter of course, because that was my original idea. I should like to say a word in deprecation of the tone in which Dr. Lyons has addressed himself to the subject. I think it is rather hard that he should be throwing a taunt at the Dentists that they are tradesmen—that they are in some degree so ignoble that they ought not to be associated with the medical profession.

Dr. LYONS.—I rise to a point of order. I beg leave to disclaim any such intention whatever. In what I said I merely referred to that class of persons who were pursuing a trade, as has been shown by cases here, and who also practise Dentistry. I utterly disclaim any intention of regarding except with the warmest interest and highest respect the general profession of Dentistry. (Applause.)

Dr. STORRAR.—I am very glad to hear Dr. Lyons's explanation because, probably from my defect of hearing and his

particular tone of voice, I did not catch accurately what he said. What I feel is this, that after all, with all the "motley crew" that we have upon this list, there are Dentists and Dentists. (Applause.) I am happy to say that there are gentlemen practising Dentistry with whom I consider it an honour to be associated, not only socially but as men of high scientific attainments. (Hear, hear.) It is a misfortune attributable to a slip by the Executive Committee that this "motley crew" were introduced into this Register at all. (Hear, hear, and applause.) I am not going to revive the discussion upon that. The only remedy for it is to permit those men to die out. After all, we must bear in mind that surgeons and other professional men must not ride the high horse upon this subject, forgetting that there was a time when they were associated with persons of very humble calling. Surgeons were formerly barbers; apothecaries were formerly grocers; and our business therefore is to educate the Dentist of the present day up to the level of a professional man, and up to the level of what the educated Dentist now wants and asks for. (Applause.) That I hold to be our duty. As to the legal question, we had enough of that last year—I leave that to Mr. Simon, he is more apt at these matters than I am.

Mr. SIMON.—You mean in obeying the law as laid down in legal opinions. (Laughter.)

Dr. STORRAR.—No; I simply do not agree with you; but I am not going to enter into the points of difference and agreement. I want to say a word about something which has fallen from Dr. Quain. He begins by saying he does not care a fig about it. He is prepared to consent to this vote, but still he wants to have a Parthian shot at the Dentists.

Dr. QUAIN.—I said nothing of the kind.

Dr. STORRAR.—I did not interfere with Dr. Quain when he was addressing the Council. Dr. Quain certainly did take a Parthian shot at the Dentists and at their Act, and said all that he could bring up in his mind against them. I have simply to say that the Dentists Act is our Act. It is the Act of this Council. The Dentists drew the Act in the first instance. We had it incorporated in the Medical Act. We made certain alterations in it, and afterwards when the Medical Act was found to be not in a position to pass, the Dentists Clauses were detached and constituted into the Dentists Act, which has now passed. Let me, if you please, just read one sentence only which is recorded in the minutes of this Council under date 1st July, 1878, vol. xv, p. 120. It is signed H. Jenkins, the Government draughtsman. "Office of Parliamentary Council, Queen Anne's Gate,

Westminster.—Dear Dr. Acland,—The amendments which are about to be made in the Dental Practitioners Bill in the House of Lords are proposed by the Government for the purpose of bringing the Bill into conformity with the Government Medical Bill, so as to place Dentists in the same position as they would be in if the Government Bill had passed with the Dentists clauses in it, the principles of which have been approved by the General Medical Council.” Now, to what extent the Government fulfilled this intention as represented by Mr. Jenkins I am not prepared to say, but it is perfectly clear from this letter that the object of the Government of the day and of their agent, Mr. Jenkins, was to make this Dentists Act precisely what it was when it passed this Council. I think, therefore, it is not fair to be throwing dirt at the bad construction of the Dentists Act, or at any other fault that the Act may have, either in its words or in its intention, because any such reflection is really a reflection upon this Council. Dentists tell me, and they ought to know what they are about, that many of the objections which are now held by this Council to certain clauses in the Dentists Act would not have arisen at all if the Bill in its original draft had become law instead of the draft of this Council. I do not say that the Act is perfect. The Dentists themselves, I daresay, would be the first to admit that it has imperfections; but what I say is that we have been a party to this legislation, and it is our duty now fairly and honestly, and with a feeling of professional sympathy and friendship to the Dentists, to carry this Act out. (Applause.)

Dr. QUAIN.—In justice to this Council I cannot help reading five lines from the minutes of July 14th, 1878. On that occasion it was moved by Dr. Quain, and seconded by Dr. Pitman, and agreed to, “That with reference to the Lord President’s Bill entitled ‘The Medical Act Amendment Bill,’ as ordered by House of Commons to be printed, the Council desires to express its wish that the Bill entitled ‘The Dental Practitioners Bill’ be brought into conformity with the Dental clauses in our present Bill.” That was not adopted. The whole force of our amendment was to place it in the hands of an independent board, but it was not adopted.

Dr. STORRAR.—That is just what I said. The Government said they would follow our suggestions—it is not our fault.

Sir WM. GULL.—I should like to say one word in reply. First to my friend Mr. Simon. If we are to carry out an Act of Parliament we may take the advice of counsel ne

doubt, but if on fuller discussion of the matter we are convinced that we ought to act contrary to counsel's advice, I hold that we are bound to do so. We ask his advice. He gives us his advice; and we find that it is not such as we can, as professional men and men of the world, follow. Then the Act of Parliament gives us legal power, for it says that we may do so and so "if we shall think fit." That leaves liberty of action. Therefore I cannot quite agree with Dr. Lyons in the view he takes of that matter. Then, to make my friend Professor Turner more satisfied, it is clear that the words are these, "Any medical authorities." Therefore, you may register qualifications given by medical authorities who have no sort of relation to Dental Surgery. I quoted the case of the College of Physicians, London, as an instance. Then, with regard to the words "higher knowledge," no doubt the family practitioner, who has to treat most of the diseases of children of the family, has a higher knowledge than the family Dentist. Therefore, I must say that the Apothecaries' Society's diplomas have a right to be registered, because they certify a higher degree of knowledge. I do hope that the motion I have brought forward will be carried unanimously.

Professor TURNER.—I do not wish to press the amendment, and so with your permission I will withdraw it. I thought it worth while to bring the matter forward in that form, but as it is not likely to meet with acceptance I will ask permission to withdraw it.

The PRESIDENT.—The motion is: "That any or all of the qualifications in Schedule A of the Medical Act be registrable in the Dentists' Register." Professor Turner asks leave to withdraw his amendment, and if it is the wish of the Council the amendment will be withdrawn.

The motion was then put to the vote, and carried *nem. con.*

The REGISTRAR then read the following memorial from the British Dental Association:

"The Representative Board of the British Dental Association, anxious that the standard of Dental Education, whereof the Medical Council are the appointed guardians, should be maintained at a high and uniform level throughout the United Kingdom, beg respectfully to direct the attention of the General Medical Council to the completion of the time during which, in accordance with the terms of the Council's Minutes (July 16th, 1879), examination should be conducted *sine curriculo* by the Royal College of Surgeons in Ireland.

"In the opinion of the Board the time has now arrived when exceptional examinations should be altogether discon-

tinued by all the licensing bodies in favour of strict uniformity of educational test already adopted by one or two, otherwise the value of the licentiate ship will be greatly deteriorated as a guarantee of professional competence.

"We venture to remind the Council that, by Section 22 of the Dentists Act, they have the power to supervise these examinations; and we would suggest that this power might now with real public advantage be exercised.

"We have the honour to be your obedient servants,

"John Tomes, Thomas A. Rogers,

"Edwin Saunders, Thomas Underwood,

"James Parkinson, James Smith Turner, *Hon. Sec. B.D.A.*

"Members of the Business Committee.

"British Dental Association,

"40, Leicester Square, London, W.C.;

"March 7th, 1882."

No motion was made upon this, nor did any remark pass with regard to it from any members of the Council.

The following complaint of a registered Dentist, which had been referred to the General Council by the Executive Committee, was then read :

"130, Lancaster Road, Notting Hill;

"June 8th, 1882.

"DEAR SIR,—I have been requested by one or two of my colleagues to inform you that, at 199, Portobello Road, Notting Hill, there is a man evading the provisions of the Dentists Act (1878), by announcing himself as a 'Dentist,' and practising as one, but *using no name*. Are you disposed in the interests of the profession to take up this case?

"Yours truly,

"BARNARD LEE.

"W. J. C. Miller,

"Secretary of the Medical Council."

The PRESIDENT inquired whether any member of the Executive Committee wished to make any remark upon this communication.

Mr. SIMON suggested that it should be answered in the negative.

The PRESIDENT.—I will take the opportunity of observing, concerning various communications of this kind, that they come to the office sometimes during the sitting of the Executive Council, but generally speaking during the intervals; and it is a question requiring some discretion as to how the Council shall act. Sometimes we think they are of such a nature that the Council should not interfere in any way; sometimes we think it as well that the Council should have examples, at all events, of the kind of applications which are perpetually being made. The Council should know that the number of these is really at times very great. They consist of

various kinds of letters and communications, some of which it is not desirable to publish.

The REGISTRAR.—The following is a type of such letters as the President has referred to :—Complaint by a registered Dentist, referred to the General Council by the Executive Committee. Letter from the complainant :

“Modwena House, Burton-on-Trent ;

“May 25th, 1882.

GENTLEMEN,—I beg respectfully to call the attention of the Medical Council to the fact of a late pupil of mine, who was articled to me for three years (but I was glad to give him his indentures, May 6th, 1882, six months before his time expired), T. L. Callender, who, not being qualified, has commenced practice in Burton-on-Trent. I enclose his advertisement, with copy of C. J. Fox's letter to me, it being, I think, a case for the Medical Council to take in hand. His age will be twenty. There is no Mr. Godding here.

“I remain, Gentlemen,

“Yours respectfully,

“J. W. SADLER.”

Advertisement from the ‘Burton Evening Gazette’ :—

“MR. T. L. CALLENDER, late with C. J. Fox, Esq., M.R.C.S., L.D.S., R.C.S.E. (Dental Surgeon), and Mr. Godding, M.R.C.S., Surgeon Dentist, beg to inform the public of Burton that they have commenced practice at Warwick House, Bridge St., where they may be consulted daily, from 10 a.m. to 5 p.m. Operations performed in a thoroughly scientific manner. All the latest improvements, including the American mode of ‘stopping’ with non-cohesive gold. Warwick House, Bridge Street.”

Letter sent to complainant by Mr. C. J. Fox :—

“82, Mortimer Street, Cavendish Square, W.,

“September 12th, 1879.

“DEAR SIR,—I found Mr. Callender steady, honest, and industrious. He came to me for six months' run of the workroom, to learn what he could to enable him afterwards to enter elsewhere as an improver, unless I chose to keep him and give him a salary. Not requiring further assistance, I could not offer him a salary, so I thought it best for his own interest that he should seek employment elsewhere.

“I am, dear sir,

“Yours faithfully,

“CHARLES JAMES FOX.”

Mr. SIMON suggested that it would be perhaps convenient for the Council simply to write on the back of these communications *nil*. It was the custom in public offices where it was not considered desirable to take any action in the matter.

Dr. PITMAN.—That will not do, because in this case the British Dental Association asks us to prosecute this man.

The REGISTRAR then read the following letter from the British Dental Association :

"40, Leicester Square ; June 27, 1882.

"GENTLEMEN,—I have been directed by the Business Committee of the British Dental Association to ask for permission to prosecute Mr. T. L. Callender, of Bridge House, Burton-on-Trent, and Mr. Godding, representing himself as a Member of the Royal College of Surgeons, whose proper address is not at present known to the Committee, but who is supposed to be Mr. G——, of —— Square, London, for infringing the Dentists Act.*

"The Committee also respectfully ask the Council to consider the propriety of granting to the Representative Board of the British Dental Association, or to the Honorary Secretary of the Association, the power to take up any case which may arise in the intervals between the sittings of the Council ; and, if it be within the powers of the Council, to grant at its present sitting this concession to the Representative Board.

I remain, gentleman,

"Your obedient servant,

"JAMES SMITH TURNER,

"To the General Medical Council."

"Hon. Sec. B.D.A."

Mr. SIMON.—There is a distinction between the two cases. The first two cases are cases in which we are written to by a man saying, "Are you disposed in the interest of the profession to take up this case?" the other being really a case in which the answer to be returned is evidently that the matter having been brought before the Council, the Council does not think fit to give any directions therein.

Dr. LYONS.—Or does not see any grounds for taking action.

Mr. SIMON.—No, that is not the way to do it. "Does not give any direction." There must be a great many cases like these where, in a public office, the word *nil* would be written on the letter, and that would be the answer.

Dr. PITMAN.—I would point out that the duty seems to be conferred upon us of taking charge of these offences, because the Act says "Prosecution for any of the above offences shall not be instituted by a private person save with the consent of the General Medical Council or the Branch Council."

Mr. SIMON.—That remark applies to the next case.

Dr. PITMAN.—It may apply to all cases which are offences

* [Until there is more than a *supposition*, we hesitate to follow the example of Mr. J. S. Turner, and publish the name and address of a gentleman who may have no connection whatever with the case. If the supposition should prove erroneous a most unwarrantable injury will have been inflicted for want of due and reasonable exercise of care.—ED. B. J. D. S.]

against the Act, because the Act goes on to say "but may be instituted by the General Council or by the Branch Council." Now, it is clear to my mind that the intention of the Act of Parliament was to place in the hands of the Council the power, and to lay upon it the duty, to prosecute all such persons. The question then is, are we to let off all these men who we know or believe are committing offences? Are we to allow them all to escape, and say we will take no action against them? Your attention has been drawn to the fact that these are offences against the Act, and the Act of Parliament gives to the Council or the Branch Council power to prosecute. (Hear, hear.)

MR. SIMON.—You misunderstand my point. Mr. Barnard Lee's letter was passed over by the Council, and we are now on the case of Mr. Callender. The question that I raised was as to the form of answer to be sent in those cases in which the Council did not think fit to interfere. Should it not be "That the Council give no directions in the matter?" I am not saying whether that is or is not the right course to take, but I am asking what sort of answer we should return.

SIR WM. GULL.—With regard to the last two cases I propose a motion.

DR. MACNAMARA.—I understood that the communication from Mr. Barnard Lee was passed over for the purpose of being considered along with the others.

THE PRESIDENT.—No; I asked if there was any motion thereupon, or whether the Executive Committee had any observation to make, and I received no reply. These letters are simply acknowledged by the Registrar unless any special instructions are required. And, as I said before, I am very glad that the serious attention of the Council should be given to these cases, some of which seem to be irrelevant, some to be trifling; but, on the other hand, others may be very serious; and I am pretty sure, from the course of proceeding in the business offices, that we shall have shortly, unless these cases subside, to establish a regular course of action in regard to them. Looking at the thing as a question of administration it is not convenient or desirable that we should allow these matters to hang over for twelve months, and some other way of dealing with them must be found. I am glad, therefore, that these cases should have come before the Council, because they are constantly arising, and these are but examples of them. The practice of the Registrar is that where it is probable there will be a question of law involved, he takes the opinion of our solicitor, and if there is nothing to be done it would be unreasonable to trouble the Council with the matter, but if it is a doubtful

case then in some cases it must come before the Council. Therefore I hope that the Council will consider these last two cases in relation to one another, and give instructions to the Registrar or the Executive Committee what course to pursue in such cases:

Mr. MACNAMARA.—I did not understand that the letter that was first read had been disposed of.

The PRESIDENT.—That was disposed of, and passed by the Council without comments.

Sir WM. GULL.—I have to move, in respect to the last two cases, and especially in reference to the letter from the British Dental Association, that this Council grant to Mr. James Smith Turner, the Honorary Secretary of the British Dental Association, power to take up the case of Mr. Callender.

Dr. QUAIN.—The letter asks a great deal more than that.

Sir WM. GULL.—I know it does, but that is not what we are prepared to grant. We can only give him permission in individual cases.

Professor TURNER pointed out that the Association asked for permission to prosecute both Mr. Callender and Mr. Godding.

The motion was carried unanimously.

Dr. STORRAR pointed out that the Council was returning no answer to the other part of the letter, in which the Association asked, not only the power to prosecute these two men, but a general power to prosecute. He said he would not propose to grant them the power, but he simply desired the Council to take note that it had been asked for.

Dr. AQUILLA SMITH, referring to the cases which were brought before the Executive Committee, asked whether it might not be advisable for the Council to consider whether power should be given to the Executive to take action in certain cases that might come before them without reference to the General Medical Council.

The PRESIDENT said that was a matter which could only be considered upon notice of motion.

Dr. AQUILLA SMITH then proceeded to move the ordinary complimentary motions with which the Council is accustomed to close its proceedings, including a well-merited vote of thanks to the Secretary for the able manner in which he had arranged and recorded the complicated questions which had been debated by the Council.

Returns to both Houses of Parliament of Receipts and Expenditure of the Dental Registration Fund of the General Medical Council, for the year ending January 1, 1882, made pursuant to Section XXXIII of the Dentists' Act (1878).

RECEIPTS.			EXPENDITURE.		
	£	s. d.		£	s. d.
BALANCE, Jan. 1, 1881	9824	8 11	GENERAL COUNCIL'S FEES AND OTHER EXPENSES	294	0 0
Amount (to be deducted) repaid to ENGLISH BRANCH COUNCIL	527	10 11	EXECUTIVE COMMITTEE'S FEES AND OTHER EXPENSES	150	17 0
			GENERAL EXPENSES (House Expenses, Salaries, &c.)	462	17 1
			PRINTING	193	17 5
REGISTRATION FEES:			MISCELLANEOUS EXPENSES:		
66 Registration Fees at £5 each	330	0 0	Auditors' Fees	10	10 0
202 Registration Fees at 5s. each	50	10 0	Additional Clerical and other Assistance	17	18 8
			Expenses at General Council's Session	18	5 10
			Bank Charges	0	1 3
SALE OF PUBLICATIONS			BALANCES:		
			Cost of £9281 15s. 3d. New Three per Cent. Stock	9000	0 0
			Amount in Bank on January 1, 1882	273	19 4
DIVIDENDS:					
One year's Dividend on £9281 15s. 3d. of New Three per Cents. (less Income Tax)			Amount (to be deducted) due to ENGLISH BRANCH COUNCIL	9273	19 4
				434	12 5
				8839	6 11
				£9987	14 2

Audited and found correct,
QUILLTER, BALL, CROSBIE, GLEGG, & WELTON.
January 10, 1882.

Signed { RICHARD QUAIN, M.D., } *Treasurers.*
HENRY A. PITMAN, M.D., }
W. J. C. MILLER, B.A., } *Registrar.*

Dental News.

THE ASHENHURST FUND.

THE following sums have at present been received (with many kindly expressions) on behalf of Mrs. Ashenhurst. Messrs. C. Ash and Sons, the Dental Manufacturing Company, Mr. Rutterford, and Messrs. W. and J. Jamieson have kindly undertaken to forward any subscriptions given to or sent through them.

This favour we have asked to give assistants easy facility for offering small amounts, of which opportunity we trust they will avail themselves.

	£	s.	d.
Edwin Saunders, Esq.	2	2	0
H. François, Esq.	0	10	6
J. S. Slipper, Esq.	1	1	0
Messrs. Claudius Ash and Sons	2	2	0
A. G. Levenson, Esq.	1	1	0
Per A. G. Levenson:—			
Dentist's Assistant	0	5	0
Dentist's Sister	0	2	6
Dentist's Pupil	0	1	0
Three Little Girls	0	1	0
J. Stirling, Esq.	0	10	6
G. Frost, Esq.	0	10	6
G. Reams, Esq., Newport, Mons.	0	5	0
Mr. Goff (Assistant)	0	1	0
Per G. W.	0	3	0
Dr. Freeman	1	1	0
	9	17	0

APPOINTMENTS.

STOKES, O., L.D.S.I., has been appointed Honorary Dental Surgeon to the Sheffield and South Yorkshire Ear and Throat Hospital.

PASMORE, CHAS. S., L.D.S.I., has been appointed Honorary Dental Surgeon to the Swansea Provident Dispensary.

VANDERPANT, FRANCIS JOHN, has been appointed Honorary Dental Surgeon to the Surbiton College Hospital.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

IN the list of gentlemen who obtained the Dental licentiateship at the June examination, the following names should have appeared as "Messrs. H. C. Carter and J. Prager."

Correspondence.

[We do not hold ourselves responsible for the opinions expressed by our Correspondents.]

A PROPOSED BENEVOLENT FUND.

To the Editor of the 'British Journal of Dental Science.'

SIR,—I cannot but think that the case of Mrs. Ashenhurst, for whose benefit an appeal appeared on the 15th ult., should again bring before the profession the necessity for some benevolent fund, by the aid of which Dentists and Dentists' assistants, who have been unable to provide for the proverbial rainy day, should receive for themselves some benefit in their old age, or, as in the case you so kindly advocate, of premature decease, some help for the widow and children. I believe we are almost the only profession in which such a fund does not exist, and it seems to cry shame against us that whilst large sums of money can be raised to present testimonials to those who do not in any way need them, so many of our poorer brethren, when too old to work, are left in absolute want.

I have lately had brought under my notice the case of a man who, through no fault of his own, finds himself at fifty years of age reduced from a fairly lucrative practice (in one of the western towns of England) to absolute want. He had asked, he told me, nearly all the Dentists in London requiring assistants to help him to a situation, and everywhere met with the same answer: "Too old, we want a younger man." This was indeed a case for a benevolent fund; a man of good education, whom the receipt of a few shillings weekly would have helped over his difficulties for a time, enabling him, probably, to earn his own living in some other capacity. As it was, receiving no help from his brothers in the profession, when he came to me he, with his wife and family, were absolutely starving.

I trust, sir, that more influential pens than mine may

be found to assist the weak among us, and that some scheme may be devised in which Dentists will gladly co-operate to make provision for our less successful brethren.

Hoping you may use your influence in this desirable cause,

I am, &c.,

J. SHIPLEY SLIPPER.

37, High Holborn, W.C.

ADMINISTRATION OF NITROUS OXIDE.

To the Editor of the 'British Journal of Dental Science.'

SIR,—I have from time to time had cases of failure in administering "nitrous oxide," and would feel obliged by any explanation or suggestion. I find that even after from six to eight gallons have been inhaled there is no effect, the patient being as sensible as before. Both Coxeter's and Barth's gas have been used, but the same thing has happened with each. I use Ash's gas-holder and apparatus, everything being in good order.

I am, &c.,

J. G. I.

THE SO-CALLED WISCONSIN DENTAL COLLEGE.

To the Editor of the 'British Journal of Dental Science.'

SIR,—Although L.D.S. Glasg. is kind enough to be afraid that some one will be "taken in" by the above so-called College, he seems quite to forget that the receiver is as bad as the thief, and deserves the same punishment. Then, again, he would warn the Dental profession against fraud, but it does not seem he would mind deceiving the public, if he could, by means of a diploma obtained for a few shillings from a supposed decent college, for surely a man that has the L.D.S. Glasg. must know that a diploma is of no value to any one (except for defrauding the public) unless he has the practical experience that the diploma is supposed to guarantee, which, in my opinion, is only proved by the American system of examination, viz. practical examination of both operative and mechanical Dentistry.

I have been greatly annoyed by Dentists in this way. They will say, "Oh! you are a D.D.S., and have you been to America?" That many say it without intending harm I do not doubt. When I ask them if they know a D.D.S. who has not, they answer "No." Then why write and speak as if American diplomas can be obtained except by hard work?

Perhaps the L.D.S. means well by exposing the so-called W.D.C.; it is the tone of his letter, that he would be dishonest enough to buy a diploma, that is so very objectionable.

I am, &c.,

D.D.S., L.D.S. Glasg.

To Correspondents.

1. Communications intended for insertion in the ensuing number must be forwarded to the Editor, at the Office, 11, New Burlington Street, London, W. by the 8th and 23rd of the month, and must be duly authenticated by the name and address of the writer.
2. We cannot undertake to return communications unless the necessary postage stamps are forwarded.
3. It is earnestly requested of our correspondents that their communications be written on one side of the sheet only; and we also beg to call particular attention to the importance of a carefully-penned signature and address.
All communications relative to subscriptions and advertisements are to be addressed to the Publishers, Messrs. J. and A. Churchill, 11, New Burlington Street, London, W.
5. The Journal will be supplied direct from the office on PREPAYMENT of subscriptions as under :

Twelve Months (post free)	14s. 0d.
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 Post-office Orders to be made payable at the Regent Street Office, to J. and A. Churchill, 11, New Burlington Street, W. A single number sent on receipt of seven (penny) stamps.

ANSWERS TO CORRESPONDENTS.

- "J. B."—All the questions you put belong to debatable ground. The limits of Dental Surgery are not yet, and it is doubtful if they ever will or can be, accurately defined.
- H. B. MOSLEY.—Your suggestion has already been tried, but proved too complicated for the short time available under anæsthesia.
- R. BRADBURY.—We shall be pleased to publish the particulars of Dr. Campbell's New Mode Apparatus if he will only favour us with a detailed description. We do not know his address, but expect you may obtain it at one of the dépôts on application. No fee is necessary for change of address, nor is it usual to receive any reply. It will probably be corrected in next Register.

Communications have been received from Messrs. J. W. White, M.D., "J. B.," H. B. Mosley (Leeds), C. Ash & Sons, J. S. Slipper, O. Stokes, W. & J. Jamieson, G. Levason, H. François, E. Saunders, J. Stirling, G. Frost, C. S. Passmore, F. J. Vanderpant, R. Bradbury, D.D.S., L.D.S. Glas., "J. G. I."

BOOKS AND PAPERS RECEIVED.

Journal of the British Dental Association.' 'Dental Cosmos.' 'Ohio State Journal of Dental Science.' 'Items of Interest.' 'The City of London Advertiser.' 'L'Odontologie.' 'New England Journal of Dentistry.' 'Revue Odontologique.' 'Lancet.' 'British Medical Journal.' 'Medical Times and Gazette.' 'Pharmaceutical Journal.' 'Correspondenz Blatt für Zahnärzte.' 'L'Odontologia.' 'Chemist and Druggist.' 'Zahn-technische Reform.' 'Le Progrès Dentaire.' 'El Progreso Dental.' 'Leeds Mercury.' 'Archivio Clinico Italiano.'

NOTICE.—We desire that it may be clearly understood that our pages are open to all for free expression of their views on matters connected with our profession. We only ask for terseness of expression and MODERATION IN TONE.

When otherwise unobjectionable, difference of political or other opinion will never be regarded by the Editor as a disqualification for the admission of any communication to the pages of the **BRITISH JOURNAL OF DENTAL SCIENCE.**

British Journal of Dental Science.

No. 350. LONDON, AUGUST 15, 1882. Vol. XXV.

ADDRESS DELIVERED AT THE FOURTH ANNUAL MEETING OF THE WESTERN BRANCH OF THE BRITISH DENTAL ASSOCIATION, ON SATURDAY, AUGUST 5TH, 1882.

By RICHARD ROGERS, L.D.S.I., President.

GENTLEMEN,—Allow me, first of all, to thank you for the honour you have done me in electing me your President on this the fourth anniversary of the Western Counties Branch of the British Dental Association, an association annually growing in importance, if we may judge by the increased number of branches and the corresponding influx of members. I am fully conscious that there are many of my professional brethren who would more ably fulfil the duties of the office which I am called upon to occupy; yet I am quite sure that there is not a gentleman in the profession who would more rigidly protect its honour and status, or one who would give a more hearty welcome than I do on this the Association's first visit to Cheltenham. Those of you who find yourselves here for the first time will, I am certain, appreciate the charms of a town which has so long been noted as one of the most fashionable of watering places, and which is now one of the first educational towns in the world. Should any of you during your stay find time to visit the surrounding neighbourhood, you will have no difficulty in understanding the attractions offered by Cheltenham to both temporary and permanent residents. We are rich in remarkably pretty walks and drives, whether among the many near-at-hand villages or the somewhat more distant hills, which not only add to the beauty and healthfulness of

the town, but also repay the exertion of a visit to their summits with extended views of the beautiful valley of the Severn, the prospect from Cleeve Hill and from Birdlip being second to nothing of the kind. For those whose tastes draw them to places of historical importance, it would be hard to provide more interesting spots within a short distance than Gloucester, Worcester, Tewkesbury, Malvern, and Berkeley. Apart from those associations which are more or less dependent on one's reading and memory and imaginative powers, such as the battles of Worcester and Tewkesbury, the siege of Gloucester, and the death of Edward the Second at Berkeley, there are the visible relics of that past which speak for themselves to the present. I need only specify the magnificent cathedrals of Gloucester and Worcester, the recently restored abbey at Tewkesbury, the famous Priory Church of Malvern, and the interesting remains of a well-preserved Roman villa at Chedworth; while I have much pleasure in announcing that Dr. Wilson has kindly offered to conduct any member of this Association over the Ladies' College and the Delancey Hospital.

Turning, then, from the consideration of the place in which we are assembled, I must, after this brief introduction, ask your attention to a subject more immediately connected with the purpose of our gathering. I propose to offer for your consideration a few remarks on what may be called the subjective aspect of our professional life. There is an objective side, which is sufficiently prominent, but perhaps we are in danger of attributing to it more than its true value, and this may induce a corresponding forgetfulness of the subjective view. Only a quarter of a century back there was no definite or well guarded avenue by which the student of our speciality might enter upon his professional career. At best the opportunities of preparation were very scant, and the possibilities of acquiring experience, save in the department of Dental mechanics, were comparatively unknown. In these circumstances the student was thrown almost entirely upon his own resources for the attainment of knowledge, for the acquisition of manipulative skill, and for the storing up of such experience as might

enable him successfully to fulfil the functions demanded of him in Dental practice. Many of us look back to those days as to times of darkness and disability, and justly so; yet it should not be forgotten that there were men who, in spite of the darkness, and in defiance of disability, bravely fought their way to renown and eminence as Dental practitioners; and they did so by recognising the importance of the subjective elements of success, and by an energy that scorned to be dependent upon objective means. We all are rejoiced that the darkness has passed, and that in place of disabilities we have to-day abundant facilities, still there is a danger that some may rely *too* much on aids which are external, and neglect the full cultivation of the power and processes that are within. Dental schools, hospitals, curricula of study, opportunities of instruction and demonstration, examinations, accredited certificates of competence, these are all admirable external aids to culture and development of the powers within. It would be impossible to exaggerate the value of present facilities provided through the media of association, societies, periodicals, literature, &c. The benefits derived from objective influences must, however, always bear proportion, not so much to the multiplicity and variety of the means themselves as to the receptive power, or subjective condition of those for whom those benefits are designed. A sumptuous banquet will replenish and satisfy the desire of a hungry man, but to him who is devoid of appetite delicately prepared dishes are both useless and obnoxious.

Let us, then, very briefly consider a few particulars of this subjective condition; and for simplicity's sake we may arrange them in four classes. 1st. It is, I think, hardly needful to contend for the cultivation of *self-reliance* as a prominent attribute of professional character. The spirit of self-reliance is the very root of vigour and strength. "Heaven helps those who help themselves," says the proverb—and Socrates said, "Let him that would move the world, first move himself." Men who have shone in science, literature, and art, "The apostles of great thought, Lords of the great Heart," have all exhibited markedly the

spirit of self-reliance. There is no walk in life wherein a man can safely rely entirely on others, nor is there any calling in which a self-reliant character is of a more essential value than that to which we all belong. Self-reliance is not self-conceit, though it necessarily begets self-confidence. We need to rely on our perceptions in order to diagnose the conditions of each case presented to our notice. We need to rely on our judgment as to the best mode of treatment, and so to rely as not to be moved by undue commiseration or inopportune entreaty. We need to rely on our skill, so as to proceed calmly and carefully to the performance of our operations. Self-reliance begets confidence and inspires respect on the part of the patient, while at the same time it sets the operator, freed from anxiety, to concentrate all his resources upon the work before him. On the other hand, the absence of this quality renders the perception dull and obtuse, causes the judgment to halt and mislead, and, worst of all, it imperils operative success through timidity and hesitation. Self-reliance needs not the assistance of self-assertion. The nature which is self-dependent is for the most part self-contained. It asserts its power in action more than in speech, by moral influence rather than by laudatory expressions; nevertheless, when called upon to declare an opinion or give advice and encouragement, the self-reliant man will express himself in a tone and manner calculated to convince and control his patient, to assure and comfort him. Self-reliance, invaluable as it is, cannot, however, do duty for any of the other necessary attributes of professional character; *ergo*, it cannot be a refuge for ignorance. On the contrary, the only possible foundation of self-reliance is knowledge.

And this leads naturally to my second point, viz. *Self-culture*. Gibbon says: "Every person has two educations, one which he receives from others, and one more important which he gives himself." Schools and hospitals may provide the first, but no power on earth can confer the second, if it be not inherent as a habit and purpose of life. No greater mistake is ever formulated than that conveyed in the expression "A completed education." For a professional

career constant growth is essential, not alone to keep pace with new methods and discoveries, but to pursue by the help of practical experiment the lines of study and investigation commenced in youth. Mr. Smiles insists that "self-culture should include the education of all parts of the nature—physical, moral, and intellectual—cultivate the physical powers alone, and you have an athlete or a savage; the moral only, and you have an enthusiast or a maniac; the intellectual exclusively, and you have a diseased oddity, it may be a monster. It is only by training wisely all three together that the complete man can be found." The ancients laid down the principle of all round education, in the old maxim, "*Mens sana, in corpore sano.*" The Greek teachers embodied it in their practice of standing and walking while engaged in study. Milton described himself as "up and stirring early in the morning, in winter often ere the sound of any bell wakes man to labour or devotion—in summer as oft with the first bird that first rouses—to read good books or have them read, till memory have its hold full fraught." "In our day physical exercise is in danger of being neglected, education having become more exclusively mental; and yet practical success in life depends far more upon physical health than most persons imagine. The capacity for continuous labour in any calling must of necessity depend on physical resource; hence, as a means of intellectual work, it is of paramount import that physical training should not be forgotten." It is said that the Duke of Wellington, when once looking at the boys engaged in their sports in the playground at Eton, where he spent his own juvenile days, made the pregnant remark, "It was there that the battle of Waterloo was won." "The success of professional men depends in no slight degree on their organic stamina and cultivated physical strength. A well-developed thorax, thorough aeration of the blood by free exposure to a large breathing surface in the lungs, are positively necessary to maintain the full vital power on which the vigorous working of the brain depends," and in the profession to which we belong there are risks of a peculiar kind, which demand counteraction if we would escape them. The posi-

tion of the body in which we require to sit at the bench, or stand at the chair, is often an awkward and unhealthy attitude. The inhalation of unwholesome breath, unavoidable in many of our operations, lays us open to peril of a most insidious order, unless we are careful to keep the standard of health above the level at which diseases ordinarily assail us.

To descend, however, from the general to the particular. The culture we need is threefold—first, *physical*. This includes several items: thorough cleanliness of body, cleanliness within as well as without; the avoidance, during business hours, or better still, the entire abandonment of those habits which tend to derange the digestion and pollute the breath. Cleanliness in respect of attire is of no mean value to the man who wishes to cultivate himself fully. Good wholesome food taken at regular intervals—not an overloading of the stomach at irregular and prolonged intervals, leading to a craving for stimulants to make up the lack of nutrition. Regular daily exercise out of doors—winter and summer—and without too much respect for weather—a sufficient period of physical repose. These are only a few common-place items, but they relate to a subject of vast and real individual importance, consideration of which means personal comfort and happiness, while neglect surely involves the reverse. But while it is needful to secure a solid substratum of physical vigour, it must also be observed that sustained application is the invariable price to be paid for all mental acquisition. Without this, you have no more right to expect mental growth than you would have to look for a harvest where no seed had been sown. There is a proverb which says, “He who has heart has everything.” “Who doth not burn doth not inflame.” The energetic and persevering who are careful to use up fragments of time in self-culture are ever the men who make progress, let the particular department of their labour be what it may. Drew studied philosophy while cobbling shoes; Hugh Miller taught himself geology while working as a day labourer in a quarry; Sir Joshua Reynolds was such a believer in the power of industry that he held it possible to all men to

achieve excellence if they would only exercise the power of assiduous and patient work. If you have great talents, industry will improve them; if you have but moderate abilities, industry will supply their deficiency. Nothing is denied to well-directed labour, nothing is to be obtained without it. Buffon said of Patience that it is Genius, the power of great men, in his opinion, consisting mainly in their capacity for continuous working and waiting. In order to intellectual culture, there should be a wholesome and regular supply of mental sustenance. We are, perhaps, in these days liable to mere superficiality in knowledge. Newspapers and periodicals have superseded the more solid kind of literature to a large extent, but the aliment provided in newspapers is insufficient, and we need to have some more definite and substantial food, if the intellectual side of our nature is to grow. General knowledge is invaluable to a Dental Surgeon. To be able to converse intelligently upon various subjects, and so divert attention, and render the time spent in the operating chair agreeable to the patient, is an important factor in our success, and this can only be done by him whose mind is well stored, and whose resources are continually replenished. The standard works relating to our craft should always be at hand for reference; and turning to them at times of doubt, so far from being a token of ignorance, will be regarded as an evidence of thoughtful care and desire to do the best we can. A general acquaintance with the process of nutrition, circulation, the nomenclature, and special features of ordinary diseases, some familiarity with the various methods of treatment adopted in special disorders, sufficient to enable us to understand and sympathise with those who suffer, a tolerable knowledge of one or more of the arts, music, painting, &c., and a fair idea of the latest scientific discoveries, together with the rare faculty of drawing out the conversational powers of our patients, all these are invaluable acquirements to a professional man, and they come as the reward of intellectual culture, sustained and methodical. Then (if one may be permitted to notice a third department of self-culture) there is a part of human nature which cannot be neglected with

impunity, I mean the moral character. In a professional career *character* is essential, and, like a delicate plant, character needs culture and care, nourishment and protection. Perhaps *integrity* may be mentioned as the first element of a good character. To be *true* in word and act we must be true in thought and desire. This is not always natural; it comes as the product of watchful and faithful obedience to a great principle, expressed in the golden rule of "doing to others as we would they should do unto us." No failing is more conspicuous than lack of veracity, and no virtue more sure of recognition than sterling integrity.

Punctuality, in regard to engagements should characterise a professional man, and a Dentist of all men. It not only systematises our labour and simplifies duty, but it has the peculiar attribute of begetting itself in those with whom we are associated. Patients soon learn that a Dentist is or is not punctual in his appointments; and, as a rule, they are gracious enough to assist him. Of course, as Shakespeare says, "'Tis not in mortals to *command* success," in this particular more than in any other, still the habit of cultivating punctuality will abundantly repay any man for whatever disappointment and difficulty he may have to encounter. This paragraph would be incomplete were it to close without reference to a subject which is becoming universally interesting at the present time—I mean the use of alcohol as a beverage. In this connection I shall content myself with remarking that nothing can be less in harmony with a high standard of professional character than the habit of taking stimulants at irregular intervals, so as to be in danger of meeting our patients with breath polluted by the odour thereof. With moral culture, even moderate talents, and mediocre attainments will obtain fair appreciation everywhere; but on the other hand, the brightest genius, and the most highly cultivated faculties, will only evoke a pitiful recognition when associated with a moral nature deformed and degraded by coarse and irregular habits.

This brings me readily to my third particular, viz. *Self-control*. There are few callings more exercising to human patience and self-control than the one to which we belong;

and very few days pass in which we are not made painfully conscious of the need for thorough mastery over our temper and our tongue. "He that ruleth his own spirit is greater than he that taketh a city." When patients come in declaring that our fillings have all come out, that they can do nothing at all with the set of teeth which we have constructed with the utmost care and fitted in with conscientious exactitude, when some one more cheeky than usual vociferates in the waiting room, before several others, that we have left the root in of the tooth we attempted to extract for him the day before, and when other of the thousand and one annoyances of general practice occur, we need to have ourselves well in hand, to restrain the reply that rushes to our lips, to repress the frown that involuntarily beclouds our features, and preserve in unruffled serenity both our inward thought and outward demeanour. There is but one foundation upon which self-control can rest securely, and it has but two component parts: first, a knowledge of our individual weakness; secondly, a conscientious discharge of every duty. If a man has a short temper he should never forget the fact; if he has a gift for smart repartee, he should ever bridle his tongue; if he has an inclination towards any habit (and there is a weak point in every human character) that is detrimental or reprehensible, then his first and chief necessity is to be fully aware of it himself, the diagnosis being half the cure. Next to this, there is no security against losing self-control so great as the testimony of conscience, that in each case as it presents itself we have faithfully and thoroughly exerted ourselves to the best of our ability.

There remains one further aspect of my subject, which I shall treat very briefly; that is, *Self-contribution*. This is a clumsy phrase; but I am fain to be content with it in absence of a better. Of all phases of human nature, the *selfish* is the most despicable; and of all characteristics which command the admiration of others, and truly ennoble the nature itself, there is none so estimable, so exalted, or so attractive, as the habit of living for the good of others, and striving to promote the happiness of our race. This is true as a general principle—and it is the very essence of our common Christianity.

In relation to our profession, I mean by self-contribution, the willingness to communicate of our knowledge and experience for the increase of the common stock. We never understand a subject so well as when we are making an effort to describe or convey our ideas to some one else, and no greater fallacy has ever deceived mankind than the supposition that one loses anything by communicating knowledge to others. Facilities for interchange of thought and comparison of experiences are now abundant, and the pleasure as well as the profit to be gathered from these facilities will always be proportionate, not to that which we acquire thereby, but to the extent of our endeavour to give of our own, whatever it may be, whether knowledge, or practical experience, or time, or money, or labour. We have taken a new departure as a profession, and the roll of honour in future will contain the names, not of those who selfishly seclude themselves in the sacred satisfaction of their own surroundings, nor of those who come out of their shells once now and then, simply to pick up all they can, and then retire to enjoy the benefits thereof, but inscribed on the records of the future, there will appear in the foremost page the list of those, and only those, who have been willing to spend and be spent, for the truest advancement of our most useful department of labour, and who have devoted their energies and their lives to the honorable purpose of promoting the comfort and happiness of their fellow-men.

FILLING AND TREATMENT OF THE PERMANENT
MOLAR TEETH BETWEEN THE AGES OF SIX AND
FOURTEEN YEARS.*

By GASCOIGNE PALMER, L.D.S. Eng., Cheltenham.

MR. PRESIDENT AND GENTLEMEN,—I do not understand why I should be so honored as to have my paper put first

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on the list of this the fourth meeting of the Western Counties Branch of the British Dental Association, and I fear that my paper will be disappointing to you all; not that the subject of it is one that I am a tyro at, but because the subject is so vast, of such vital interest to all who are really interested in conservative Dentistry, that it seems to me that I could much more easily write a book on it than a paper. Nothing is more difficult, at least to me, than to put a great amount of meaning into a very few words, but there is no reason for me to feel diffident because of that, for our grand old man is the personification of verbosity. But two blacks do not make a white, and, therefore, as there are seven other papers to be read, I will try and make this paper as short as possible.

Who is there here present who, on looking into the mouth of a new patient, say twenty years of age, has not very often been—well, almost scared by the small amount of masticating surface presented by the first and second molars of the second set of teeth. Now, those eight teeth ought, if they were all good, to do certainly three fourths of the grinding of the food and one half of the process of thoroughly salivating it, if I may be allowed the expression, a very necessary process to the perfect digestion of the food. Well, what do you often find? One, two, three, four, five, six, seven, eight, all gone; wisdoms well cut and hanging over towards the front of the mouth, like anything rather than a molar tooth, offering little or no masticating surface; the process of the jaw all shrunk, the bicuspid standing with cementum as much bared as though the patient was fifty, and the incisors showing most unmistakable signs of being used for what they were not intended, and the bicuspid doing more than they were intended to do.

Take another view: all the molars are in, but what a condition the mouth is in. All of the teeth encrusted with tartar, breath fetid, tongue foul. Patient nervous and complains that "These teeth, you know, they are so tender I can't bite on them, and they sometimes ache very badly. Would it not be better to have them all out and have some new ones, for they have been stopped so often, and I don't

believe they will ever get better?" Such is the wail of many a disheartened patient. Now, when we find out that in both cases the patient has been in the habit of going to respectable Dentists, and having done whatever has been recommended—and I know of hundreds of such instances—how is it, I ask, that we see so many of such cases with various deficiencies? I have simply stated the two extremes. Why, because there is no regular systematic way of treating molars when the pulps are large and wide, often small hair-like fibres taking abnormal positions, the dentine so elastic that to put in a solid plug of gold will press down on the too sensitive pulp, the dental tubes so moist that thermal changes are instantly felt whether the tooth is unstopped or stopped with metal; in fact, because there is a great deal too much of "Here's a hole, put something in it," in the minds of many an over-worked Dental Surgeon. Yes, here is the great mistake—hurry! Hurry! hurry up! make money, and "Well, I am sure I do the best I can," for an excuse. And so thousands of teeth are lost, for all practical purposes, even if they are not taken out.

Well, now, how is this sad loss of teeth to be avoided? First of all by not being in a hurry; do not do more than examine a mouth unless an appointment be made. If you make a mistake in a hurried opinion, on another occasion you can correct it, but if you make a mistake in operating on a young molar tooth I do not believe you can correct it, and I do believe that in many instances where, through a mistake, serious periostitis takes place in a young tooth, the best thing is to extract the tooth rather than to run the risk of endangering all the teeth on that side of the mouth by the roughening of the enamel from want of friction in masticating.

Having laid before this meeting as quickly as possible the views which have induced me to read this paper, I will present to your notice three forms of decay in which permanent molars present themselves to our notice, and I must ask you to bear in mind that my remarks apply to molars in the mouth of patients between six and fourteen years of age. In order to simplify things as much as may be we

will say that all the cavities shall be coronal ones, and none of them ever treated at all before.

Class 1 shall consist of teeth that have a hole in them which have never even given so much as one single twinge of pain.

Class 2 shall consist of those that have given twinges of pain and which are affected by heat or cold.

Class 3 shall consist of those that have ached or are aching.

Now, taking the last class first, let me say that no great amount of success will attend these teeth if the patient be under fourteen, still less if under eight; they are either dead teeth or in a fair way of becoming so, and with large pulp canals and apical foramen. The chance is that the ordinary application for such teeth, the use of the nerve extractor, Donaldson's bristles, &c., will set up some inflammation of the alveolar process, and in the end the tooth will have to come out, remain without a stopping in it, or be plugged, a rhisodontrophy hole being made for the exit of discharge and so we will say no more on that class.

Classes 1 and 2 may be almost considered together, except as to treatment and plugging, and then Class 2 only requires more delicate manipulation and much greater care in the selection of the material used for filling.

Now, the first thing that strikes me as of the first importance in Classes 1 and 2 is thoroughly to diagnose the fact, to our own most complete satisfaction, that they do not belong to Class 3; in other words, that there is no pulp exposure and no inflammation, not even a little bit of the pulp itself. Being quite sure of our way so far, the next thing to do is to prepare the cavity. I find, as a rule, the best way to do this is to cut away with an excavator the carious bone immediately under the enamel, not to go down to the floor of the cavity, and then break down the walls with an enamel chisel, or, if the patient is a very sensitive one, grind out with a cone-pointed corundum with the engine. Now, before going further, let me say this: if we are sure that there is no necessity to "destroy the nerve," as the saying is, the use of arsenic for the purpose of getting rid of sensi-

tiveness of dentine is simply doubly damnable; there is no way in which any one can court failure more certainly than by using arsenic in such a case.

Now, although what I have just read is a slight digression, I shall not apologise for making it, for I fear that the practice of using arsenic for getting rid of sensitiveness in dentine is far too common, and if there is anything I am glad to have had the opportunity of reading this paper for it is for the purpose of putting my foot down on the reckless and indiscriminate way in which arsenic is used.

But to resume: having got rid of all undermined enamel and the softened dentine immediately contiguous, every atom of it in the most careful manner, put in the dam, place the ejector in the mouth, and dry your cavity thoroughly; wait for a minute or two to see that all is as watertight as you wish, then soak the softened dentine in Fletcher's ether and copal varnish—a most valuable preparation, worth all the other things he ever brought out except his stoves—and fill. Well, with what? I use Ash's rock cement, and, if it is used really dry, I know nothing to approach it. But at all events do not use metal; the thermal changes are too risky to the preservation of the pulp under fourteen years of age. That spontaneous death of the pulp is to my mind very rare. Well, so much for Classes 1 and 2 taken together, but supposing we take Class 2 as wanting more care, which in my opinion it does, than Class 1, where is the extra care to be developed? In this, in taking greater care that the irritating properties of the preparations of zinc do not penetrate through the softened dentine overlying the pulp to the pulp producing acute pulpitis. I will describe to you a mode I have used for the last four years with very great success, in fact, I do not know of a single failure, though in this peripatetic town, where people are always going and coming, I dare say there have been some.

Having got the dam on to my most complete satisfaction, and that means a certainty of no moisture finding its way to the cavity being treated, I vary my manner of filling in this way. Having soaked the softened dentine in Fletcher's

copal and ether varnish, I take a piece of gutta-percha tissue and force it down with small pieces of oiled Japanese bibulous paper until it thoroughly adheres to the softened dentine, which it readily does by reason of its being full of the copal and ether varnish, the ether dissolving a certain portion, no doubt, of the gutta-percha tissue. In this way I have filled many teeth with oxychlorides of zinc without the slightest after pain, and I am sure that if any of you try this plan of mine you will find out how many teeth may be retained alive in the mouths of young people that would otherwise most certainly spontaneously die as it is supposed and as I do not believe.

Now, in conclusion, let me most emphatically say that I do not think any metal or any amalgam is as good for filling molar teeth in children under fourteen as a good oxychloride of zinc; and although small enamel fissures may be filled with gold without endangering the life of the tooth, still at the same time so predisposed are the molars to go that I think the probability is that the oxychloride would serve the purpose just as well, and, in these days of charging by time, cost a great deal less in putting in.

Sir and gentlemen, I thank you very much for your kindness in listening to my paper, and I sincerely hope that its contents may be of some use, if not now some day, in preserving those useful bony articles—the first and second permanent molars.

ANTRUM CASES IN PRACTICE.

By W. BATES, L.D.S.I., Macclesfield.

MISS M. C—, æt. 33, housekeeper, called on me with her face slightly enlarged and palate swollen on the right side, with constant discharge, which had existed for four years.

Examination.—I found the stumps of the first molar and central incisor only—the lady wearing an upper plate. On

pressure with the finger either on the buccal or lingual wall of the antrum, pus escaped down the side of the CENTRAL INCISOR stump. No pain, but a feeling of weight and fulness.

Treatment.—The stumps were extracted and a free opening made into the antrum, which was followed by the escape of a considerable amount of light coloured pus, without much odour. The cavity was well washed out and a syringe and injection of chloride of zinc ordered to be used three times daily. The discharge gradually ceased in about three weeks.

In this case the buccal and palate walls of the antrum had quite disappeared, and on pressure with the finger the edges of the bone could be felt.

J. B—, a man, æt. 42, silk weaver, presented himself with his face much enlarged on the left side, which had gradually increased to its present size during seven years.

Examination.—I found the stumps of the first and second bicuspid buried in the gum, and on pressure being applied to the cheek pus escaped through a small opening over the root of the second bicuspid. The bone forming the buccal wall of the antrum had become quite absorbed, and fluctuation was caused by the slightest pressure. No pain, but feeling of heaviness and fulness.

Treatment.—The stumps were with difficulty extracted and a large opening made into the antrum; a quantity of dark thick pus escaped. The cavity was well washed out and an injection of permanganate of potash ordered thrice daily. As there was still a discharge of pus after two weeks of this treatment I changed the injection, giving a weak solution of chloride of zinc; this had the desired effect, and in five weeks all was well.

M. A—, a young woman, æt. 23, silk weaver, presented herself with her face much swollen on left side; had been so a few days.

Examination.—Carious second upper molar and wisdom tooth; was in much pain.

Treatment.—I extracted the two teeth, a large escape of

pus following. A probe could be passed through the cavity occupied by the anterior buccal root of the second molar. The hole was enlarged and the cavity well washed out. An injection of weak permanganate of potash was ordered thrice daily. The discharge had quite ceased in two weeks.

J. P—, a young woman, æt. 30, assistant at the Turkish baths, presented herself with face much swollen and eye almost closed on right side; had gradually increased during two weeks.

Examination.—Carious upper molar on right side; was in much pain.

Treatment.—I extracted the tooth and made an opening into the antrum which was followed by a considerable discharge of pus; the cavity was well washed out and the permanganate of potash injection ordered. The discharge had quite ceased in two weeks.

CASE IN PRACTICE.

By WALTER TOTHILL, L.D.S. Eng., E. London, S. Africa.

W. D. H—, a medical practitioner, applied for advice on account of great suffering from the whole of the teeth in the superior maxilla. On examination I found the gums thickened and vascular, with their free edges presenting the characteristic deep colour denoting intra-alveolar periostitis.

The history was this:—The patient had for some time past been applying himself too closely, not only to his professional duties, but also to private business transactions, and he had taken his meals at irregular times from innutritious food. This had the effect of deranging his digestion and upsetting his general health.

Treatment.—Painted gums with Tinct. Iodin., recommended a tonic medicine, and instructed patient to have the gums painted daily with Tinct. Iodin. But the first application of iodine being followed almost immediately by cessation of all pain patient neglected taking any further curative

measures beyond taking charcoal biscuits for his indigestion, and I saw no more of the case for three days, at the end of which time patient called again on account of the pain in the teeth having returned with increased severity.

On examination I found the gums very much thickened, and rising almost level with the crowns of the teeth, bleeding on the slightest touch, and pus oozing up from between them and the necks of the teeth, the latter being extremely loose. General health about the same as before.

Treatment the same as before, with the addition of a mouth wash of chloride of zinc, and insisting on the tonic medicine. I saw patient for the next four days, at the end of which time his general health was greatly improved, and the local disease was completely cured.

Patient is at this time in perfect health, and there has been no return of periostitis. I thought this case showed in a marked manner the dependency of the local disorder on the functional disorder of the stomach and its corresponding cure on the latter resuming its normal functions.

MR. M. R. GOODING.—A DISCLAIMER.

WE have much pleasure in stating that we have been informed that Mr. Matthew Richard Gooding, medical student, of 67, Oakley Square, London, N.W., is not the "Mr. Godding" whose name appeared in an advertisement in the 'Burton Evening Gazette' in connection with that of Mr. T. L. Callender, whose case was brought before the General Medical Council 8th of July ult., and whom the Hon. Sec. of the British Dental Association obtained leave to prosecute for infringement of the Dentists Act. That Mr. M. R. Gooding has never represented himself as a M.R.C.S., or authorised any one to do so, nor has he in any way infringed the Dentists Act. These remarks apply, we believe, with equal force to his father, Mr. J. R. Gooding, of the same address (but unconnected with the medical profession).

We heartily sympathise with Mr. M. R. Gooding, who must have experienced considerable annoyance from his address (if not his actual name) having been needlessly incorporated into a matter with which he has no concern, as we feel sure all will, who know the circumstances.

British Journal of Dental Science.

LONDON, AUGUST 15, 1882.

LIVERPOOL MEETING OF THE BRITISH DENTAL ASSOCIATION.

BENEVOLENT FUND.

ON the 25th and 26th of this month will be held perhaps the most important meeting of the British Dental Association that has as yet taken place, as it will probably be the largest. We are very glad to see by a letter, which will be found on p. 829, that the second object for which the Association was ostensibly inaugurated, viz. the formation of "A DENTAL BENEVOLENT FUND," is not to be neglected any longer. For considerably over three years nothing much has occupied the heads of the Association except law, and the correction of the Register after their own way of thinking. Now, however, that they have practically admitted that that duty has been performed, and "so far the end," that is, that end, "of the Association has been answered," we trust there will be no let or hindrance to vigorously proceeding with this second object of the Association, which has unfortunately during these three years been considered as "premature"—why so, would be either very difficult or very disagreeable to have to explain. With the most energetic enterprise it must be a matter of slow growth, and why the Association which had power to appoint a special committee should have wasted three precious years, except they feared to divert to a good cause—to the possible detriment of the funds for their pet cause—the money of their subscribers, it is difficult, if not impossible, to imagine. However, now they have the opportunity, if they only choose to grasp it, of showing that

they are equally in earnest now that it need no longer be a matter that is premature even to discuss. If so there will be no lack of funds for a fair start. When "law" was the main object, the main thought, and it was expected heavy expenses might be incurred, whilst the Association was much weaker in numbers than it now is, a law indemnity fund was proposed, and how rapidly it mounted up to a respectable figure. We commend a like measure for the nucleus of the Benevolent Fund.

SOCIALITY.

And we hope at the same time that the members are enjoying this forthcoming social gathering, that the hearts of some gentlemen may be opened, and that they may be impelled to pass the hat round amongst themselves for the benefit of the "Ashenhurst Fund," that is making such terribly slow progress, as may be seen in another part of this journal.

Unquestionably the great charm, and probably the greatest practical advantage, is derived from the sociability of these gatherings, the interchange of thought and experience, both formal and informal, the destroying of petty jealousy, the forming of friendships, often probably of the most lasting and gratifying character. So much for the informal, if most agreeable; but there will also be most interesting, even if formal,

PAPERS READ,

not only interesting, but instructive and beneficial to us in our every-day labour and sphere of usefulness. Unfortunately, from the necessarily limited time that such a gathering can be allowed to occupy, the chief attraction, the discussion, must be either terribly curtailed or entirely omitted. A paper may be written with scrupulous care, after much research, steady application of practical experience to theoretical knowledge, but when finished it is the work of one brain, and no matter how carefully and exhaustively thought out, yet often and often when read before a large assemblage with kindred thoughts, it will start fresh ideas in other minds,

bring forth suddenly the long forgotten or little-heeded experiences of many and after a fair discussion, not only the listeners but the writer will have formed fresh and more expanded views, doubts, may be, will have been cleared up, or fresh theories started as new bases for further study.

DISCUSSION.

All this benefit is likely under the present system to lie dormant for want of time to fairly discuss the papers, extending, probably, as it did at the recent Western Counties Branch Meeting, to being obliged even to take the papers as read. How much better would it be if the papers were ALL PRINTED before the meeting and distributed amongst the members so that they might not have to take them as read but actually read them quietly and meditatively, and be prepared when at the meeting, not only to discuss them, but to discuss them after having had time to digest them thoroughly. Such a plan as this would enable the whole time at the disposal of the meeting to be devoted to delivering opinions and experiences of much more than ordinary usefulness. When such papers were afterwards published, with the sentiments of others on the same subject, not suddenly formed and hastily expressed, but preconceived and deliberately given, they would form an official journal of solid interest, amounting almost to a standard work of reference.

Whatever the course of procedure may be, it is impossible but that good must result from such social intercourse, and we therefore hail the Liverpool meeting with intense pleasure.

THE ASHENHURST FUND.

THE following further sums have been received:

	£	s.	d.
Messrs. Gabriel (Ludgate Hill) . . .	1	1	0
Edwin Goodman, Esq.	0	5	0
J. Sugden Crapper, Esq.	1	1	0
J. Hayes, Esq. (St. Martin's Lane) . . .	0	10	6

In the last list, *for* A. G. Leverson *read* Arthur G. Levason ;
for G. Reams *read* George Beavis.

Manipulative Miscellany.

All instruments or articles wished to be described under this heading are requested to be sent *for inspection* to the publishers not later than the 8th and 23rd of each month, they can be returned in a few days. Where, from the size or otherwise, this is impracticable, a clear and minute description will be sufficient; the sole object being to give practitioners a description of everything new on its own merits, and without any intention or wish to pit one against another. All makers, vendors, and inventors, are invited, with strict impartiality, to contribute towards this end.

COHESIVE AND NON-COHESIVE GOLD FOILS.

MESSRS. C. ASH & SON's new non-cohesive gold foil was mentioned in our last issue, since which we have had an opportunity of trying it in the mouth in a cavity where its capability of continuous compressibility was necessarily well tested, and of immense convenience, giving an apparently perfectly solid plug under most disadvantageous circumstances, and with an ease for which we felt grateful. Their new Cohesive Foil seemed in every way equal to their Non-cohesive in working adaptability for its special purpose, and both are perfectly adhesive if annealed over a *pure* spirit flame (methylated spirits of wine should never be trusted for this purpose, as even its slight carbonaceous vapour is liable to render the gold useless).

FORCEPS FOR LOWER TEETH.

MR. COLLINS, Poland Street, is making a pair of lower molar and stump forceps, made originally by the late Mr. Evrard (but whether designed by him or not we are unaware). The blades are single like stump forceps, being narrow and sharp, almost like lancet blades, and placed at right angles with the handles, so as to work from the side of the mouth. The hinge is through the centre—not a circular joint—and very low, so that the instrument can be used with

very little opening of the mouth when requisite. The most important feature of the design is that the blades are so bowed that they can be used on either anterior or posterior root of a molar although the crown is remaining, thus making *sure* of one root, though almost invariably both will be extracted although only one is grasped. Another important feature is the fact that, as a rule, whilst forcing the blades downwards and moderately pressing the handles the tooth runs up the blades without requiring any other detaching motion whatever. We have used a pair for several years and never experienced a failure. Oiling the blades slightly facilitates this automatic process of removal. Another and perhaps the most important feature is that this pair of forceps can be used for *any* lower tooth or stump right round the mouth, from wisdom to wisdom inclusive, a most valuable assistance to economise time whilst operating under nitrous oxide gas.

NEW UNIVERSAL MIRROR.

MR. JOSIAH RITCHIE has a hand mirror which he is introducing for Dentist's use. It is an oval frame, variously covered, and has for a handle a stout steel rod, somewhat in the form of a loop, with a flattened end. This is hinged to the back with a tight joint, can be folded back to occupy little space or placed at any angle, enabling the glass to be stood upon a table or hung in any conceivable position to any available object. Hence, we presume, its name. It is really both handy and elegant.

Literary Notices and Selections.

DEATHS UNDER CHLOROFORM AND ETHER.

Two inquests have recently been held in the central district of Middlesex upon persons dying when under the influence of an anæsthetic. The first case was that of a

male patient, aged forty years, who was about to be operated upon by Mr. Coulson in St. Peter's Hospital, Berners Street, for stricture of the urethra. After two drachms of chloroform had been administered by the house-surgeon the patient suddenly ceased to breathe and died in a few minutes. A post-mortem examination was made by Dr. A. J. Pepper, who stated that the heart was undergoing fatty degeneration, but that all the other organs were healthy. The deceased had not led a very regular life, and was at times addicted to intemperance. The second case was that of a woman, aged fifty-three years, who was admitted into the Middlesex Hospital suffering from cancer of the uterus, which caused obstruction to the bowels. Stercoraceous vomiting occurred three days after her admission. Mr. Henry Morris decided to perform colotomy, and a mixture of chloroform and ether was administered by one of the resident medical officers. After the patient had been inhaling for two or three minutes she began to vomit, and then suddenly appeared to be choking, and ceased to breathe. In both cases the usual efforts for restoration were continued for some time, but without avail. Verdicts of death from misadventure were returned by the jury.—*Lancet*.

NEW DEPARTURE IN DENTAL EDUCATION.

DENTISTS may be fairly educated by several processes. There is, however, a restlessness in reference to Dental education that promises good results. In general, the profession is honest. Honest men striving in concert for the best are likely to approximate if not reach it.

A new measure is suggested in Chicago—in Chicago, of course, where they undertake to make their river flow upstream. Each student is to take a full medical course and receive the degree of M.D. in any reputable medical school he may choose. Then, he is to receive special Dental instruction from a practical Dentist, a member of the medical faculty, and to be taught, theoretically and practically, in a Dental hospital, all the departments of Dentistry, the hospital to be thoroughly equipped, and large enough to fully accom-

moderate both patients and pupils. If we catch the true idea, it is not totally unlike the course pursued in Great Britain, and, if so, the experiment is not totally new. We wish it abundant success.—*Ohio State Journal*.

EXTRACTION OF TEETH DURING PREGNANCY.

IN writing to the 'Journal of the British Dental Association,' Mr. Alfred Coleman says:—"Apropos of the interesting question raised by Mr. Sewill at the meeting of the Odontological Society, viz. 'The removal of teeth, under nitrous oxide, in advanced pregnancy,' I think the following case may be of interest to your readers.

"A lady from Oxfordshire visited me on the 14th of March last. She had suffered excruciating pain in the lower third molar of the left side, which she wished removed under gas, but I was informed by her husband that she expected to be confined in a fortnight. Now I was aware that this lady had been previously four or five times confined, at the full period, but had never given birth to a living child; still as I entertained the views expressed by Mr. Sewill, that it was far preferable for the patient to have the tooth removed under gas than suffer the pain, which I have known to bring on a miscarriage, I willingly consented to its being administered to her, and removed the tooth.

"On the 2nd of this month I was pleased to hear from her own lips that on the 1st of April last she had for the first time given birth to a living child—a son. She also told me on this occasion that she came up to town without saying a word to her medical attendant, as she felt almost sure he would object to her taking gas, but on that matter she relied more upon my opinion.

"As my patients are people of considerable property, this is a gratifying circumstance."

And the same journal says:—"The following extract will be read with interest. It is an able summary of the evidence bearing upon maternal impressions, and it supports the view expressed at this meeting, namely, that the popular notions on this matter are not based upon science. We take

the excerpt from the just published admirable work of Mr. Noble Smith on the ‘Surgery of Deformities.’* This book will well repay the perusal of those specially working at the subject of deformities of the jaws. Although it does not deal specifically with this topic, there are many points connected with the origin and pathology of deformities generally which have a connection with those of the jaws and neighbourhood.

“‘MATERNAL IMPRESSIONS.—The belief that a maternal impression can produce deformity *in accordance with the idea of the mother* has a very ancient origin, and is entertained by many medical men at the present time. It therefore becomes necessary to state the following facts, which are in opposition to such belief:

- “‘1. That the resemblance of the deformity to the object which has impressed the mother is generally an imaginary one.
- “‘2. That the maternal impression is almost invariably only alluded to *after* the discovery of the deformity.
- “‘3. That the ovum, as soon as it leaves the ovary, ceases to be connected, either by the nervous or vascular systems, with the mother, and therefore, in resembling very closely the egg of an oviparous animal, becomes almost equally unlikely to be influenced in the manner referred to.
- “‘4. That from the nature of the deformity we may usually know that the error in formation must have occurred at a much earlier period than the date of the supposed cause, and this is especially the case when the error is one of excess.
- “‘5. That, in the words of Dr. Blundell, “it is contrary to experience, reason, and anatomy, to believe that the strong attention of the mother’s mind to a determinate object or event” can cause “a specific impression upon the body of the child without any injury from without.”

“‘A great shock to the mother, even if only a mental one,

* London: Smith, Elder and Co.

may affect the general condition of the fœtus, may retard its development, or may even cause its death; but that the mother's mind being affected by the sight of a deformed or injured hand, lip, or other part of the body can produce a malformation of a corresponding part of the body of her child *in utero* is a supposition which physiological facts will not allow us to entertain.

“‘ If it be thought necessary to pursue this subject further, the only manner in which reliable evidence can be obtained is as follows:—The observer must question each mother *before delivery* as to any impressions she may have formed upon the subject, and compare these with the actual condition of the child when born. It is probable that nearly every pregnant woman entertains doubts and fears with regard to the condition of her coming offspring, and that when her child is born in a normal condition all apprehensions are soon forgotten, but that when an abnormality exists the fear is magnified into an important fact.

“‘ In past ages congenital deformities were attributed to various causes, amongst which may be mentioned Divine vengeance, witchcraft, intercourse with animals, &c.; but the knowledge which we now possess of the various phenomena of embryonic development enables us to determine that many deformities depend either upon *arrest* or *excess* of the processes of formation.’”

WHAT DENTIFRICE IS TO BE RECOMMENDED TO BE USED ON HEALTHY TEETH AND GUMS.

DISCUSSION BY THE SCHLESWIG-HOLSTEIN DENTAL SOCIETY.

KLEINMANN.—It is advisable to be careful in expressing an opinion on this subject, so as not to state that this or that substance is the best; such expressions have led to bad results; manufacturers have taken advantage of these expressions, and have forced their productions upon the

public on the strength of opinions expressed at Dental meetings. These unauthorised recommendations have led some parties (at Frankfort) into the courts and the accompanying expenses of law-suits. In general, substances are to be recommended which are harmless and which dissolve in the fluids of the mouth.

SCHOLERMANN.—I think that in the case of healthy gums and teeth the cleansing with clean water is sufficient.

Dr. FLORKE.—There are, however, fatty substances and butyric acid present in the mouth, which are not removed by water, but can be removed by forming soap with certain substances. There are solid and liquid preparations. To the solid belong the tooth-powders, and to the liquid the tinctures and mouth washes, of which alcohol is the oldest. Among the useful solid substances are many, though old, still very good, such as magnesia, chalk, cuttle fish, orris root, &c. Among the liquid preparations are the tinctures of rhatany, gum kino, and as a tonic, the tincture of cochlearia, and alcohol, without any addition whatever, is also good. He recommends first the use of mechanical substances, and if these are not sufficient, alcoholic preparations.

SCHOLERMANN.—The present subject contemplates healthy gums and teeth, and under such conditions water suffices. Where there is an acid reaction of the saliva, remedies are indicated to neutralise that acid. Tooth-powders are then in order.

Dr. ARENDT.—“Water, of course, does not do.” He uses as a tooth-cleansing material an American soap, which he obtains through Poulson, from S. S. White. It contains cocoa-nut oil, florentine orris root, medicated soap, sugar and peppermint flavour. He and his patients are pleased with it.

Dr. FLORKE.—Opposes all soaps, as they contain alkalies, which act chemically upon the teeth as well as the acids.

KLEINMANN.—Even if the rinsing of the mouth with clean water seems sufficient in healthy mouths, it is nevertheless advisable to recommend some of the so-called cosmetic remedies. The desire of the public to obtain a remedy

which makes the teeth "very white," has led manufacturers to prepare substances which act injuriously upon tooth substance. It is, therefore, the duty of the Dental practitioner to warn his patients of the "secret and patent remedies," and prescribe for them harmless substances. They should simply answer the purpose of removing with more facility the viscid saliva from the teeth, and to neutralise the acids. The requirements are the following:

1. That they are perfectly soluble.
2. That they do not attack the enamel or cementum.
3. That they possess an agreeable odour and taste.

The best principal ingredient for tooth powders is prepared chalk; or, still better, precipitated chalk.

I have introduced into my practice a harmless tooth-powder and soap, both of which give good satisfaction. The formulas are as follows:

R. Precip. chalk, ʒv.
 Powd. calamus root, ʒiij.
 Lacca (resin), ʒiss.
 Oil of peppermint, ʒij.
 Camphor, ʒj.

M. D. S. Tooth-powder.

R. Carmine, ʒij.
 Medicinal soap, ʒij.
 Dissolved in alcohol q.s., ʒviij.
 Add Powd. myrrh, ʒj.
 Oil of peppermint, ʒij.
 Præcip. chalk, ʒiv.
 Mix with Glycerine q. s., ʒiv.
 Mix and make soap. D. S. Odontin.

The tooth paste of our friend Brunsmann has some resemblance to the Odontin; it contains alum, however, which I have omitted for good reasons. The original is as follows:

R. Prepared chalk, 22·5.
 Med. soap, 7·5.
 Pulv. alum, 2·0.
 Carmine, 0·06.
 Oil of peppermint, 1·25.
 Mix with alcohol q. s. to make soap.

A pleasant mouth wash which I prescribe is as follows:

R. Carb. acid, ℥ij.
 Alcohol, ℥vj.
 Oil of peppermint, ℥j.
 Sol. of red aniline, five drops.

D. S. mouth wash, five to ten drops to be used in a glass of water.

Furthermore, I have a dark-red tooth powder for such who only brush their teeth on Sundays.

R. Precip. chalk, ℥v.
 Powd. pumice, ℥j.
 Powd. calamus root, ℥ij.
 Lacca (resin), ℥vj.
 Oil of peppermint, ℥ij.
 Camphor, ℥j.
 M. D. S. Toothpowder. [Ibid.]

—*Missouri Dental Journal.*

ALLOYS.

FROM a recent work on "Metal Alloys," published in Germany, the author, Mr. Guetlier, gives a few suggestions on the subject of fusing the metals, with which the 'Jewelers' Journal' prefaces the recipes selected.

1. The melting pot should be redhot (a white heat is better), and those metals first placed in it which require the most heat to fuse them.

2. Put the metals in the melting pot in strict order, following exactly the different fusing points from the highest degree of temperature required, down to the lowest in regular sequence, and being especially careful to refrain from adding the next metal until those already in the pot are completely melted.

3. When the metals fused together in the crucible require very different temperatures to melt them, a layer of charcoal

should be placed upon them, or if there is much tin in the alloy a layer of sand should be used.

4. The molten mass should be vigorously stirred with a stick, and even while pouring it into another vessel the stirring should not be relaxed.

5. Another hint is to use a little old alloy in making new, if there is any on hand, and the concluding work of caution is to make sure that the melting pots are absolutely clean and free from any traces of former operations.

Soft alloy.—This alloy will adhere so firmly to metallic glass, and porcelain surfaces that it can be used as a solder, and is invaluable when the articles to be soldered are of such a nature that they cannot bear a high degree of temperature. It consists of finely pulverised copper or copper dust, and is obtained by resolving copper sulphate, or vitriol of copper, into its original elements, by means of metallic zinc. Twenty, thirty, or thirty-six parts of the copper dust, according to the hardness desired, are placed in a cast-iron or porcelain-lined mortar, and well mixed with some sulphuric acid having a specific gravity of 1.85. Add to this paste thus formed 70 parts (by weight) of mercury, constantly stirring. When thoroughly mixed, the amalgam must be carefully rinsed in warm water to remove the acid, and then laid aside to cool. In ten or twelve hours it will be hard enough to scratch tin. When it is so be used it should be heated to a temperature of 375° C., when it becomes as soft as wax by kneading it in an iron mortar. In this ductile state it can be spread upon any surface, to which, as it cools and hardens, it adheres very tenaciously.

Alloy for small articles.—This alloy melts at a lower degree of temperature than the one just described, and is very hard without being brittle. Bismuth 6 parts, zinc 3 parts, and lead 13 parts. The three metals, after having been well melted and stirred together, should be poured in another melting pot and melted again. This alloy cools with remarkably clear cut edges, and if the articles made of it are dipped in diluted nitric acid, the raised parts of the surface will have a fine polish, while the sunken parts will have a dark-gray, antique appearance, which forms a pretty

contrast. The proportions of the different metals, dividing the alloy into 100 parts, are: bismuth 27·27, lead 59·09, zinc 13·64.

Alloy for small castings.—Bismuth 6 parts, tin 3 parts, lead 13 parts. This alloy should be melted, run into bars, and laid aside till wanted, when it should be remelted.

Bismuth 3 parts, tin 1 part, lead 1 part. This second alloy for small castings is harder, and yet is not brittle. It can be finished with a contrasting surface of bright polish and dark-gray, if it is washed in nitric acid, well diluted, rinsed, and polished with a woolen rag, as described in the alloy for small articles, given above.

Hard solder for gold.—Gold 18 c. (0·750 fine), silver 10, pure copper 10.

Hard solder for silver.—Silver 66 parts, copper 23 parts, zinc 16.

Solder for platina.—Pure gold, with one-half per cent. of platinum and iridium added.

Hard solder for aluminium bronze.—Gold 88·88, silver 4·68, copper 6·44.

Another hard solder for aluminium bronze.—Gold 54·4, silver 27, copper 18·6.

White alloy.—This amalgam can be turned, filed, and bored; does not adhere to the mould, and will retain its polish a long time after exposure to the air. Cast-iron 10, copper 10, zinc 80.

Solder for iron and brass, which contracts and expands at the same degree of temperature as the latter metal.—Tin 3 parts, copper 39½, zinc 7½.

Solder for German silver.—German silver 5 parts, tin 4 parts.

Alloys for medals, coins, &c.—Kraft's alloy, melting point 104° C. Bismuth 5, lead 2, tin 1.

Homburg's alloy, melting point 122° C. Bismuth 3, lead 3, tin 3.

Rose's alloy, melting point 93° C. Bismuth 2, lead 2, tin 2.

Amalgam for coating plastic castings.—Tin 1 part, quicksilver 1 part, bismuth 1 part. The quicksilver is to be

mixed with the white of an egg, and added to the tin and bismuth when they are thoroughly melted and blended. The alloy while still hot forms a pasty liquid, which should be applied with a brush.—*Southern Dental Journal*.

ARTIFICIAL TEETH.

IN writing to the 'Ohio State Journal' Dr. W. H. Robinson (California) says, with perfect truth, "What improvements have been made in the manufacture of artificial teeth in the last twenty-five years? We mean in the quality of the teeth produced, not in the modes of producing them. The answer is plain and definite—not *any improvement*, except cheapness and its equivalent, worthlessness. Has the highest point of excellence been attained? No intelligent Dentist or manufacturer believes this. Why have no improvements been made? Because manufacturers seem to think the only improvement desired is *cheapness*, and all that cheapness implies in the way of cheap materials, cheap modes, and worthless products. What we want is teeth at three, four, or five dollars per set, and WORTH that amount. The manufacturer who gives us these will find plenty of purchasers, and do a little honour to the business he represents, and possibly find his pockets more plethoric than they are wont to be with worthless teeth at seventy-five cents per set.

"Glass is an extremely brittle substance. Nearly all transparent bodies are brittle. Malleability and transparency have, to a great extent, been looked upon as self-contradictory states, that could not exist at the same time in the same body. But malleable glass was a very desirable article. Man wanted it, and man went to work and made it. The process is not yet perfect, nor the product all that we desire; but the French do produce malleable glass. *We want malleable teeth*. When we want them intensely enough we will go to work and produce them.

“Now, reader, laugh at this as a ridiculous idea, the same as you did at many other ideas that a few years ago were equally ridiculous, but are now *sober* realities. How nice it would be to take a set of block teeth, a metal cast and a hammer, and make those gums just the shape of that irregular, crooked cast. That canine sticks out too far; a little pounding brings it in, and a few blows make that lateral incisor just fit nicely over that projecting lower lateral. What an æsthetical tooth a few blows of the hammer gives that straight, stiff, prosthetical denture. Ha! ha! ha! how absurd to think brittle porcelain can ever be made to bend under the hammer.’ This is the laugh of credulous ignorance. ‘Ha! ha! ha!’ you will say in a few years hence, ‘how nice these malleable teeth do work. Just see that expression and that antagonization; they are just the things; strange some fellow did not think of that process before. Why, any fool might have known that mixing—with porcelain, and that process of annealing would have made it malleable.” And we are quite sure his sentiments will be thoroughly endorsed by nearly all practitioners on this side of the Atlantic. We only hope his suggestions may be speedily taken up and successfully acted on by our own manufacturers.

DR. F. W. WELSH, in writing to ‘Items of Interest,’ speaks of controlling obstinate alveola hæmorrhage by firmly plugging the socket with pellets of cotton-wool well mixed with a paste of glycerine and tannin, these pellets to be retained *in situ* by placing a pad of softened gutta percha on them, closing the teeth, bandaging the jaws firmly, and administering teaspoonful doses of tincture of ergot. A case of seven days’ standing he mentions arresting in a few minutes, and on the removal of the pellets several days afterwards he found the surrounding parts in a perfectly healthy condition. Previous to plugging he had cleansed the alveola cavities with water and then phœnol sodique. A most gratifying result from such very simple means.

INCREDULITY AS TO METALLIC POISONING.

By A PHYSICIAN.

Now and then a painter, after his wrist begins to drop, will admit that he is a victim of metallic poison. At earlier stages of his disease he usually explains his aches and pains by a reference to errors in diet, or by the statement that he has "taken cold." He will admit the general fact of metallic poisoning, especially lead poisoning; but in all cases somebody else is the victim. Those who are careless, and permit paints to saturate their clothing are likely to be poisoned, but he—not he, poisoned! He is neat and cleanly. And thus he is carried along by his incredulity till his constitution is hopelessly ruined.

The printer, too, will consult his family physician, and will complain of colic, which he imputes to indigestion; or he will speak of his neuralgias, and blame the weather for them; and the physician usually must agree with him, or he will be superseded by another. The physician calls his attention to the paleness of his face, and he says that it is due to confinement within doors. The physician suggests that his pallor is not like that of the student or salesman, and he imputes the difference to the presence of printers' ink, which is not easily washed from the pores of the skin after having been ground in by friction.

So it is with the gilder, the plater, the plumber, &c. Each will admit that it is barely possible that others may be poisoned by contact with, or inhalation of, metallic compounds; but he is necessarily exempt. He is prudent; he washes his hands and face, changes his clothes, and thus gives the objectionable metals or metallic compounds no possible chance to harm him. Such is the incredulity of the victims, and that of the careless observer is quite as well marked.

The 'Chicago Specimen' may be taken as a mouth-piece to give expression to the sentiment of the average observer,

who is, however, unworthy the title of observer. It says : "Years ago there was a notion prevalent among those who were but partially informed upon the question that the printing business was essentially detrimental to health. There was a tradition about the absorption of poison from the constituents of which type metal was composed. This was and is true in so far as it asserts the poisonous nature of some of the constituent parts of type metal ; but that these metals should be necessarily absorbed into the system of one who handles type is simply absurd. Printers who have such habits of cleanliness and sobriety as a decent respect for oneself and the opinion of others might be expected to dictate, may follow their calling for years without experiencing any further damaging effects upon their health than what will result from close application to any sort of hard work. More 'poison' is absorbed by the printer when taking observations of his little finger through the bottom of a glass than in any other way."

The above is perhaps a very fair expression of quite prevalent sentiment on the subject ; yet it would be difficult to crowd more fallacy into a space so limited. "Close application to any sort of hard work" may impair the health of the worker, but let us suppose he is a tailor, a cabinet maker or a cooper ; close application and hard work at any of these occupations will utterly fail to give the pallor peculiar to veteran printers, to say nothing of their other morbid symptoms, which are as clearly marked as the complexion. True, cleanliness and sobriety will do much to preserve the health of the printer, and the statement is equally true as to those engaged in other callings ; but most constitutions yield, sooner or later, to the troubles peculiar to printers, if they continue to handle the types. We have heard the charge of absurdity before ; but the question is not, Is it absurd ? but, Is it true ? Taking a little piece of type metal between the thumb and finger is but a small affair. Not much surface of the skin is exposed to metallic contact, it is true ; but it will not do to despise "the day of small things." A drop of water is a small thing ; for it to fall on your head would be a trifling circumstance. Yet, if so confined that a

drop would fall on your head once a minute, you would, in process of time, suffer the most excruciating agony. And if not rescued, you might as well have a millstone about your neck and be cast into the sea. But the touch of the fingers is not likely the leading mode of introducing the poison into the system of printers. The types are more or less corroded by the ink and water brought in contact with them. When vapours arise from them, minute particles of the corroded metals rise with them, and are inhaled; and, as the mucous membrane is more permeable than the skin, they can readily reach the circulation. Let the process be as it may, the fact that printers are poisoned by something, and that their condition differs from that of the ordinary labourer, is a fact too plainly indicated to be overlooked, and it is not necessary to insult the whole craft by the insinuation that their poison comes from the wine-glass. The worst cases we have ever seen were in parties who were rigidly temperate.

From observations made with tolerably fair opportunities, we incline to think that this incredulity is found also with Dentists and their patients in reference to mercurial poisoning. Amalgam fillings are very extensively used, and it is argued that, if there were danger of poisoning from this source, cases demonstrating the danger would be so abundant, and so well defined, that we might run while reading them. This is somewhat plausible. But are a large majority of Dentists so familiar with the various and manifold forms of mercurial diseases that they can be relied on in diagnosis? It is hoped they are; but our attention was lately called to a case of mercurial disease, as reported in a Dental journal, which was supposed to have originated from mercury used in Dental operations, and a well-known Dentist reports a worse case following the wearing of a gold plate, by way of expressing his disbelief that mercury caused the one; or else he is teaching that gold is as poisonous as mercury, which may be true, only that it has not such strong affinities; or possibly the remark is made by way of dodging the issue.

That not many cases of metallic poisoning are reported as resulting from mercurial fillings may result from a lack

of careful observation. Very many cases of obscure diseases of the nervous system and of the mucous membranes and glandular structures are now puzzling and annoying the medical profession, in some of which we suspect the influence of mercury, but the patients tell us they have taken no mercurial medicines; and if we refer to the mercury in their teeth, the Dentists assure us that it is not possible for patients to be poisoned from this source; and thus we are at sea again.

If one were to take the position that there is and can be no mercurial poisoning, if a good disputant, he could give those with opposite sentiments much to think about; for mercurial medicines are prescribed and administered many thousands of times without any serious results. He would have decided advantage, in the way of assistance, from the fact that he could draw largely on the sayings and writings of those Dentists who earnestly defend the use of amalgam fillings.

When the facts in reference to amalgam fillings are properly weighed, it cannot seem strange to the physician that mercurial trouble may arise from this source. Often several large plugs are seen in the same mouth. The editor of the 'Ohio Journal of Dental Science' reports having seen seventeen mercurial fillings in the mouth of a young lady. Let it be assumed that these contained forty grains of mercury; they were equal in power, latent and active, to about forty officinal blue pills.

It is probable that mercury and other metals are inert in their metallic state; but who can give reliable security that it shall retain its metallic state within the mouth? It vaporizes at common temperatures, and this greatly facilitates combination with other agents, as its surface is thereby greatly increased. The vapour will always find oxygen and chlorine ready to unite with it; and its most active compounds are results of such combinations. The elements already mentioned and sulphur are the principal agents found in the mouth to act on it; and by the action of any one or all of these—for they all take portions of it when present—the mercury can be introduced into the system, but very slowly;

so slowly, indeed, that it is confidently claimed that no evil can result from such introduction; but this very slowness is all the surer index of danger, as is illustrated by a case reported by Scheele, in which a man had a few drachms of mercury enclosed in a leathern bag suspended from his neck. One side of the bag lay in contact with the man's breast, and it is evident that the mercury could make but very slow progress into his system from this source, yet he was poisoned to death within six years. We have known very large quantities of amalgam fillings to be worn in the mouth longer than this, and sometimes we have had the care of such patients when fully convinced that we had to treat the results of mercurial poisoning.

As the buccal fluids always contain soluble chlorides, it is probable that if ever poisoning results from amalgam fillings, it is due to the formation of corrosive sublimate from the mercury contained in them. If twenty grains of mercury within the mouth were changed, slowly or otherwise, into corrosive sublimate, about twenty-seven grains of the salt would result. This really seems to be quite a quantity, in view of the fact that the dose of it for adults is from one-sixteenth to one-eighth of a grain, and that one-fourth of a grain is apt to violently gripe and purge.

At all events, we have seen several well-marked cases of mercurial disease, where we could find no explanation of the cause unless from mercury in the teeth; and we have the testimony of a goodly number of Dentists who are men of good judgment and close observation, bearing witness in the same direction. That many Dentists have seen nothing of the kind may be explained in two ways: In a large majority of cases where such fillings are used no very decided impressions are made, and when men believe certain events cannot occur they are not likely to watch for them. It is possible, too, that many Dentists are not well versed in special pathology, and might, therefore, fail to recognise such disease, even when present. Negative testimony, however, cannot set aside that which is positive. If Dentists, competent to decide, tell us they have seen well-marked cases of mercurial disease resulting from amalgam fillings, we

naturally believe them, even though many other Dentists tell us they have not seen such cases. And this all the more in view of the fact that it is universally conceded that the compounds of mercury are poisonous.

We are not surprised at the incredulity here, for it is in accordance with that manifested in regard to all slow-poisoning from metallic compounds.—*Ohio State Journal*.

Dental News.

WESTERN BRANCH OF THE BRITISH DENTAL ASSOCIATION.

THE fourth annual meeting of the Western Branch of the British Dental Association was held at Cheltenham on Saturday the 5th inst., where the principal rooms of the General Hospital were put at the disposition of the Association by the courtesy of the medical staff.

The following members were present besides a numerous body of visitors, all of whom were right royally entertained by Mr. Richard Rogers (President elect), at his residence, "Alma House":—T. Cook Parsons; J. T. Brown Mason, Exeter; H. Mallet, Exeter; J. V. Coker, Clifton; H. B. Mason, Exeter; J. F. Faulkener, London; G. C. McAdams, Hereford; E. Norman Washbourn, Taunton; R. Harrison, London; R. Rogers, Cheltenham; W. F. Cockburn, Gloucester; J. Smith Turner, London; Dr. Walker, London; C. A. Hayman, Bristol; R. E. Stewart, Liverpool; H. Campion, Manchester; James Robertson, Cheltenham; A. G. Levason, Hereford; Charles Gaine, Bath; Sidney Wormald, Stockport; S. G. Hayman, Clifton; J. Sugden Crapper, Hanley; G. Cunningham, Cambridge; Alfred Rogers, Cambridge; E. Apperley, Stroud; Dr. W. Waite, Liverpool; E. Burgh, Cheltenham; S. A. Wilson, Bangor; J. W. Marks, Clifton; Claude Rogers, London; D. Watson, Torquay; J. Marks, Newton Abbott; W. Pearce, Bristol; W. W. Graham, Newport; R. P. Morrison, Barnstaple; James Parkinson, London; Dr. W. A. Hunt, Yeovil; Oakley Coles, London; John King, Bath; Wm. Pooley, Cheltenham; Joseph Weeks, London; C. Spence Bate,

F.R.S., Plymouth; W. M. Pearson, Bristol; F. H. Balkwill, Plymouth; A. Gabel, Red Hill; W. R. Wood, Brighton; T. T. Genge, Clifton; F. G. Hatton, Bristol; E. E. Brand, Exeter; J. H. Gartrell, Penzance; E. J. Gregory, Cheltenham; W. V. Moore, Plymouth; and others.

Mr. T. COOK PARSONS (retiring president) having taken the chair, the Report of the Council was read by Mr. W. V. MOORE, Hon. Sec. This was followed by the Treasurer's Report, showing a balance of £29 5s. 5d. in hand. Following this, some alterations in the bye-laws, which were proposed by the Council who had met the previous day, were brought forward by Mr. C. Spence Bate, as they were not in conformity with the Articles of the British Dental Association. One bye-law said: "The subscription to the Association shall be 5s. annually to those members who are members also of the British Dental Association; to those who are not it shall be half a guinea, and those members shall have no vote upon questions affecting the Central Association." This resulted in two grades of members, which was very inconvenient.

Mr. BALKWILL said he would not oppose the proposition, but wished to say they would then really pay a guinea to the British Dental Association and 5s. to themselves. The use of their own Association was to hold meetings. He had the greatest possible faith in the British Dental Association, but he had not got beyond that.

Mr. OAKLEY COLES said they were simply asked to pay a guinea annually to maintain the Political Power or Central Association, and 5s. a year to keep up their own.

The request was certainly simple, but its equity seemed dubious to many present.

Major R. E. STEWART was decidedly in favour of holding branch meetings, and said the sum of 5s. was a mere trifle.

Mr. J. PARKINSON (of the parent Association) thought the discussion had become a squabble about 5s. The parent Association was conducted by gratuitous labour but it was hard work. He said nothing of how the branches were worked, but thought by themselves they would be helpless.

Mr. CAMPION said they received the journal, which was worth something (7s. per annum). He thought they might reduce subscriptions to the smallest amount necessary to work the branch.

Mr. C. SPENCE BATE said the Western Branch was in existence before the British Dental Association. It was for them to say whether they would receive candidates as members only or as associates also.

Dr. WALKER foreshadowed where the iron rule might be expected to be found, by informing them that they were affiliated to the Association, and it was their duty, as loyal members, to carry out its articles and rules. The only question was should their branch subscription be 5s., 2s. 6d., or 1s.?

Mr. MORRISON was a member of the branch only and so represented one of those who were likely to be turned out. He joined from the first and doubted if they had the power to ask him to retire. He, however, had no objection to join the head Association and pay the guinea, as he believed in the efficacy of the large body. Their journal was, no doubt, carried on as it ought to be, but many took other journals which came to the same thing, as they found the same reports of meetings in all of them (A laugh).

Mr. C. SPENCE BATE said there were only six or seven members of the branch only. Ultimately the resolution was carried.

The most lively discussion, however, arose on the motion of Mr. OAKLEY COLES, who moved "that papers read be the property of the Central Association for publication in its journal with exclusive right over them."

Mr. TURNER seconded the motion.

Mr. C. SPENCE BATE was averse to this proceeding.

Mr. BALKWILL moved an amendment "That all papers read at their branch be the especial property of the branch."

Mr. OAKLEY COLES said if papers were made the property of the Association, their publication or *otherwise* might be decided by a Publication Committee of the whole Association. His motion was then put and carried, but not without opposition and seemingly considerable confusion, as the reporter remained under the impression that Mr. Balkwill's amendment had been carried instead.

It was then decided to hold the next annual meeting at Yeovil.

Mr. T. C. PARSONS read a paper as retiring President, in which he reviewed the work of the past year, and said they were glad to have as his successor one so well known and esteemed as Mr. Richard Rogers. (Cheers.)

On the motion of Mr. FAULKNER, seconded by Mr. MALLETT, a cordial vote of thanks was passed to Mr. Parsons, after which Mr. Rogers, who was loudly applauded, read his Presidential Address, which will be found on page 777.

The company then proceeded to Alma House, the residence of Mr. Rogers, and on the invitation of the latter partook of

a sumptuous luncheon, liberally supplied in a tent located in his much admired gardens. After luncheon, Mr. Spence Bate proposed a vote of thanks to Mr. Rogers for his splendid hospitality, and Major Stuart seconded the proposition, which was received by the company with cheers for Mr. and Mrs. Rogers. The president suitably responded. The company then separated and were photographed by Capt. Todd upon the lawn of Alma House.

AFTERNOON MEETING.

After luncheon the party returned to the hospital, when several papers and demonstrations were given. The first paper, "Filling and treatment of the permanent molar teeth between the ages of six and fourteen years," was read by Gascoigne Palmer, Esq., L.D.S.E., and will be found on page 786.

Dr. WALKER said he had listened with great pleasure to the paper. In his own practice he had for the last three or four years simply applied carbonate of soda in cases of children under fourteen years of age. In this way he managed to destroy the sensitiveness which was met in cases of children.

Mr. PALMER did not believe in getting rid of the sensitiveness. He liked the tooth to have full power of feeling.

Mr. OAKLEY COLES advocated the use of solution of quinine to get rid of sensitiveness.

Mr. PALMER asked if any advantage was to be derived by getting rid of the sensitiveness.

Mr. COLE thought there would be if they could reduce the pain.

Mr. SMITH TURNER said that as practitioners they were one and all doing their little best to prevent patients losing their teeth. The first thing they had to do was to make the tooth as clean as circumstances would allow. The next thing that occurred to him was that they should endeavour to introduce a stopping of durability. The durability of oxy-chlorides was very variable. Whatever they would think of this form of stopping, in many instances they might admit they had been disappointed, and really there were no articles to be entirely depended upon. He had recognised the fact, and by taking a medium course he had endeavoured to make both ends meet. He had recognised the fatality of metallic stoppings to any tooth that was very much decayed. When he adopted means to preserve such teeth he used Fletcher's plastic stopping, and with this he made a sort of lining for the cavity of the tooth. He then covered it up with metallic stopping, and he then found he had arrived

at a medium course. He got a grand metallic stopping on the top, and a grand non-conductor between the floor of the cavity and the metallic stopping.

Mr. ROBERTSON suggested that it would be better to take out the six-year-old molar teeth at the age of ten rather than of fourteen.

Mr. CRAPPER said he had had some experience in this matter, and he had simply used carbolic acid, and then by heating a small portion of gutta percha, moulding it to cover the pulp of the tooth, and then filling with osteo-plastic. It was a great mistake to fill the teeth with mineral or gold stopping at an early age. He must say that his own experience with gutta percha and osteo-plastic had been most successful, and he was sure other gentlemen would find it equally so.

Mr. PARSONS said that the worst of using temporary stopping was that the patient got into such a comfortable frame of mind that he never came back until it was out. (Hear, hear.) Some people were in favour of using Wolfe's stopping in conjunction with Fletcher's porcelain paste, but this was very unreliable, sometimes good and sometimes bad. With reference to Mr. Turner's remarks on mixing, he could not himself see the utility of this, because the acid was itself a conductor.

Mr. MALLETT had not for the last two years used arsenic, and he did not find any occasion to use it.

Dr. HUNT advocated the use of Sullivan. They used this on the sly—(no, no)—but he was not ashamed to admit that he used it.

The PRESIDENT fully endorsed all that Dr. Hunt had said.

Mr. HAY usually took a small piece of Jacob's stopping, and flattened it and cut it into shape, to cover the approaches to the pulp cavity. He touched the under surface with a little chloroform to make it adhesive.

Mr. SPENCE BATE thought they wanted to get something equal to Sullivan in durability but of a lighter nature. He did not think Sullivan should be used too frequently. Just before leaving home he had a case under his treatment. He cut down into a lad's tooth and there he saw the pink surface under the dentine. When he cut down near to the pulp he placed a small strip of tissue paper dipped it into carbolic acid over the pulp, and after this he filled in with gold. He had no doubt this would prove a permanent tooth.

Mr. G. PALMER said he had used Fletcher's porcelain and other preparations, but he had found none of them to be so good as Ash's Rock Cement. These stoppings deteriorated. Leave the stopper out of the bottle but for ten minutes on a damp day and you might as well fling the article away. People

were not careful enough with these stoppings. He did not wish them to think that he was altogether opposed to gold stopping, but he would remind them that his paper had reference to children under the age of fourteen.

Mr. T. COOKE PARSON then read a paper on "The Retention of Artificial Dentures.

Mr. FAULKNER led off the discussion on this subject, remarking that failures in many cases could be traced to imperfect manipulation.

Mr. TURNER was not opposed to the use of springs. He had seen many cases in America that would have been better treated if springs had been used. Many cases would come under the notice of practitioners that might be better treated with springs than without them. He knew this statement was likely to be contradicted, but he did not make it without being in a position to prove it. There were cases in which the patient was so helpless that the teeth could not be retained in the mouth without springs, and there were others where the condition of the patient was such that the teeth would shoot out even with springs. He could tell them that he had been requested by Americans to give them some information with regard to the use of springs.

Dr. PRITCHARD next spoke, explaining the nature and superiority of suction cases over springs.

Mr. CRAPPER quite agreed with Mr. Turner that in some cases if springs were not absolutely necessary they were a great comfort, especially where there was a low muscular power or want of management on the part of the patient. Alluding to a remark which had fallen from a previous speaker with regard to suction, he said he would have them remember that there was great difference between the suction by the aid of discs and atmospheric pressure.

Mr. SPENCE BATE read a highly instructive and interesting paper on "Wasting of the Alveolar Process," but as further researches are to be made by this gentleman it will not be published in the Proceedings of the present meeting. A short discussion ensued in which several members took part.

A paper was read by Dr. H. P. FERNALD.

Mr. TURNER said the essayist had evidently got a good hold of his subject. If there was anything to be said against his paper it was that there was too much in it. He had little to say beyond that in the way of criticism.

The discussion on this paper was but brief.

A most extensive collection of chairs, apparatus, appliances, materials, instruments, &c., was exhibited by Messrs. C. Ash & Co. and the Dental Manufacturing Company, which seemed greatly appreciated by those present.

THE DINNER

was held in the evening in the mess-room at the Plough Hotel, which was very tastefully decorated for the occasion. Captain Rogers, the president, occupied the chair, and the party, fifty-four in number, included the gentlemen whose names have already been mentioned, Baron de Ferrieres, M.P., and the following local members of the medical profession, Drs. Cottle, Gooding, Wilson, Smith, Simmonds, Newton, Cardew, and Ewbank.

The PRESIDENT, after dinner, said they would be sorry to hear that the Mayor was unexpectedly prevented from attending. Letters apologising for unavoidable absence were also read from a number of other gentlemen.

After the usual loyal and patriotic toasts,

Mr. SPENCE BATE proposed "the Medical Profession," remarking that his brethren, since they were associated to that profession, should do like them and progress as they had done. Within the last fifty years the medical profession had attained its present position, and he hoped they would not be very far behind them. Every one who joined the profession should have the full diploma of the medical profession, as there was little distinction between them. They went through the same preliminary education and occupied the same amount of time, and were equal in degree though not exactly in kind, with the medical profession. The objection was this—that when a man took the full degree of a medical man he was in the medical profession plus Dentistry. The difference was hardly worth counting the cost, inasmuch as the position is one which the whole nation would recognise as the same. There were no doubt many things brought forward lately, showing they had some of the same diseases to treat, and did not step upon the feelings of each other, and the consequence was that if one took the full diploma there could be no fear of treading on the toes of your neighbour. The consequence was, he hoped, in a short time every young man who took the Dental L.D.S. would also take the M.R.C.S., which would give an equal standing to each profession. He proposed "The Medical Profession" with confidence and pleasure, and, although there might be differences of opinion, they had had that day a cordial welcome and a helping hand from the leading members.

Dr. WILSON, who was received with applause, thanked the company for the manner in which they received the

toast, which had been proposed in such complimentary terms. He felt really in addressing them as though he was addressing a near relation. It had not always been so. In the earlier and darker days of the present century, the Dental profession had alliances that were not recognised now. They knew that surgery sometime before had the same alliances, as witness the barbers' poles, which they saw as they passed along the streets, but surgeons were not hurt by these, and perhaps in the last fifty years there had on the part of the medical profession—and he liked to allude to the Dental profession as a branch of the medical profession—there was no branch of the medical profession which had made such immense strides as the Dental branch. This was owing to the Act of 1878, and to the excellent measures begun by their leading men in London and elsewhere, in giving such an excellent curriculum, and drawing out such an admirable scheme for the examination at the College of Surgeons, the course of Dentistry had been immensely advanced, and would be, he hoped, still more advanced in the future. With regard to the disabilities and the disadvantages in connection with mechanical science, they were utterly unreal. It was well said by one of their great artists when asked as to the mechanical part of art, how he mixed his colours, he said, "With brains, sir." (Hear, hear.) There was no doubt that any science or any profession if it were directed by brains, and by educated brains, would find its proper place in the social fabric. (Applause.) They had only to look at papers which had been published—those read at the International Congress in London last year—to see what admirable work the Dentists were doing, not only as to their special scientific work, but work that would tell in all branches of science. He had the pleasure of looking through these papers, and he was agreeably pleased to find the amount of really good work. Next week they celebrated the jubilee of the British Medical Association in Worcester, and he felt that this great association in meeting without representatives of the Dental section, resembled a body with one limb lopped off. (Applause.) When they remembered how closely the tooth and jaws were connected with the health of the body, one could not possibly see what reason there could be for leaving the Dental profession out altogether. With regard to the medical practice and Dental practice they must always be closely allied. The one would rely on the other, if not it would be worse for both. Medical men often found cases coming to them of obscure palpitation of the heart, or obscure symptoms that depended on dyspepsia, and if they neglected to look into the patient's mouth to see what

kind of teeth he had, and simply furnish his opinion from a medical point of view, he was simply mistaking his purpose, and it would have been much better had the patient seen the Dentist, and then placed himself under the medical practitioner, and in this way the credit would be divided. (Applause.) With regard to his own personal feelings respecting Dentists, he might say he had met them in many towns in England, and he had found them highly intelligent, and a kindly disposed class of men, who were willing to alleviate suffering even at great sacrifice and inconvenience to themselves. He could not sit down without saying one word about their President. (Hear, hear.) He (the speaker) had known Mr. Rogers for more than twenty years, and he would not like to say all he felt, because he might bring a blush to his face; but he would say that whatever Mr. Rogers took in hand he did with all his might, and he was perfectly convinced that as their President they might feel confidence that he would always uphold the dignity of the Western Counties Branch of the Dental Association. (Applause.)

Dr. GOODING and Dr. COTTLE also appropriately responded on behalf of the medical profession, the last named gentleman expressing a hope that Dentistry, as a branch of the medical profession, might long continue to prosper.

Dr. CUNNINGHAM (Cambridge) next responded. After observing that they were extremely indebted to the medical profession he passed on to refer to the privilege of meeting in that hospital, the capacities of which were not equalled by any similar establishment in the many provincial towns. The hospital in which they had assembled, was replete with all the appliances consistent with medical surgery, and he did not know that he had ever attended any previous meeting where so many rooms had been set apart for clinics and for the exhibition of improved instruments. Without further remarks he returned thanks for the generosity with which that accommodation had been placed at their disposal.

Mr. EWBANK (House surgeon at the General Hospital) also replied.

Mr. G. PALMER proposed "The British Dental Association," and dwelt upon the assiduity with which the familiar friends around him, whom he knew years ago, had waited for the improvement of Dental Surgery.

Mr. J. SMITH TURNER, of London, who was received with applause on rising to respond, said the British Dental Association was a peculiar Association. It might claim something like apostolic succession. Some years ago a movement was on foot in reference to Dental reform, the result of which was a Dental Reform Committee, which Committee was the

means of promoting an Act of Parliament, which subsequently passed and became the law of the land. Thereupon the Dental Reform Committee called a meeting of the profession in Willis's rooms, to give an account of its stewardship, and so pleased was that meeting with the account which the Committee gave, of how it had expended the money entrusted to its care, and how carefully it had husbanded its resources, that the members were unanimously chosen to be the founders of the British Dental Association, the first association of the kind ever formed in this country. The last act of the Dental Reform Committee was to vote the remaining sum of money in its hands towards the British Dental Association. That Association, therefore, had a sort of succession to build itself upon from the Dental Reform Committee. There was a fact in its existence which carried it back even further than the first days of its formation. He had thought it necessary to mention these matters, as there were confused ideas in the minds of some members of the Western Branch that they only were the first original and only Jones. (A laugh.) Well, the Association began a few years since, in a very small way, and for the information of their medical friends, whom they were glad to see present, and whom they highly valued, it might be as well to state that the objects of the Association were for the elevation of the Dental profession, by holding meetings, by association and intercourse, by a public journal, and by carrying out the spirit of "The Dentists Act." That Act provided that Dental practitioners should be registered, but the course of the Medical Council, to whom the formation of the register was confided, was not wholly satisfactory. He was bound to say, however, although Dentists had a just cause for grievance against the Medical Council, and although they had been very much disappointed with the way business in some particulars had been conducted, it was the misfortune rather than the fault of the council that disagreeable and unjust things had occurred. He loved the opportunity of expressing his opinion, that in what they had been trying to do the Medical Council had been just and considerate. Their desire had been to do justice, and if they had erred it had been on the side of mercy. In the Dental profession, too many claimed to be members thereof. Medical gentlemen, who knew the history of their profession, had passed through a like disagreeable phase and were none the worse for it, and he hoped, if the members of the Dental profession kept together as they ought, they, too, would find themselves well satisfied with their position. Remarks had been made about the education of Dentists. The Dental curriculum was equivalent in every

respect to the medical curriculum. Their preliminary examination was the same, their curriculum in the matter of time was the same but at a certain stage the Dental student diverged from the course of his career as a Dental practitioner to study branches of his own speciality which could not be studied at any general hospital. There was that difference between a surgeon and a Dentist. Many contended there should not be specialities, but it was clearly laid down by the authorities at Lincoln's Inn and elsewhere, that there was no immediate likelihood or possibility of training Dentists at a general hospital. Although he did not consider it a bad thing for Dentists to take an additional diploma, still he did not think it ought to be held out to the Dental student as such a great and glorious thing as many people would have them believe, and he asked whether it was worth a man's while, as a mere working general practitioner, who visited people for a small amount, and kept up a respectable appearance in life, to give two or three extra years of a young and vigorous life to additional studies, to become either a Fellow of a College of Surgeons, or take a higher medical qualification. The Dental student was occupied for more than four years, if he studied his profession properly, but in addition to the four years prescribed by the curriculum, he must have studied one or two years in the workroom of some competent practitioner. Whereas, he pointed out, in the case of general medical practitioners, four years were entirely devoted to the prosecution of studies, the members of the speaker's own profession occupied two additional years. If the practitioner who did not study Dentistry barely mastered his profession in four years, why should they expect the Dentist to do it and his own profession in four years. He could not do it. They came to this conclusion—if they expected Dentists to take membership in a College of Surgeons, how could they do it with two years of study? How were Dentists to be paid for such an expenditure. It was not fair to Dentists or to the public. If a member of his own profession took a higher qualification in four years, he neglected a part of the study whereby he would have to earn his livelihood. So much, then, of those matters. The British Association had to see, among other things, that the rights acquired by their Act were not gradually frittered away. There was an obscure association of "Surgeons practising Dentistry," men who did not publish their names, but who had the effrontery to send a protestation to the Royal Commission, urging that as soon as possible the Dental Act should be amended, and suggesting that gentlemen who had passed the preliminary examination and apprenticeship, and paid a heavy premium, should

be prevented from using the title of Dental Surgeon, or Surgeon Dentist, because they said he had not the full diploma. Was it fair such a suggestion should be made by any branch of the profession? He was glad to say the medical profession did not support it generally, but on the other hand had supported the progress Dental surgery had made since it had been placed before them. (Cheers.)

Dr. WALKER (London) said that for twenty-five years they had endeavoured to promote the welfare of the branch of surgery with which they were associated, and he agreed with his friend Mr. Turner, that their curriculum occupied as much time as that necessary to obtain the diploma of the Royal College of Surgeons as M.R.C.S., and also concurred with him that the curriculum, as at present constituted, was full and complete, and he thought that eventually it would be still more stringent; but he did not go so far as those who said if it were thus stringent it would never be necessary for any man to take the M.R.C.S. He emphatically denied that the movement of the Dental association was a trade union movement, which was disproved by their one desire to promote the welfare of the profession, and by the wish that their information should be for the common stock. That was not one of the signs of a trade union. They met five times a year, and had the same desire as the medical profession that their knowledge should be common property. Such was the object of their gatherings, and on those occasions information was willingly offered and accepted.

Mr. OAKLEY COLES said he wished some member of the British Dental Association with more ability than himself had been called upon to respond to this toast, but he did not think he could give place to any one who felt more interest in the Dental profession or in the British Dental Association. As late editor and proprietor of the 'Monthly Review of Dental Surgery' he was the first to suggest the formation of the British Dental Association, but he little anticipated that he would have the pleasure and gratification of replying to the toast which had just met with such a hearty reception. It seemed wonderful that in so short a time the Association should have organised itself into so powerful a body as they now knew it to be; but would they allow him to protest with all the force possible against the centralisation of the British Dental Association? It would be powerless unless it was worked thoroughly and efficiently by all the members, and he did protest most sincerely against its being thought to be a London Association. It was a provincial Association in so far as it was good for the ultimate achievement of great objects, and they must remember that

in a great measure the Association was indebted to the provinces for its powerful organisation. The recent meeting in Manchester was the first means by which they achieved the success they were then celebrating, and he thought they must recognise what they owed to those devoted members in the provinces who organised the meeting at Manchester and gave their time and powers to promote the cause of Dentistry. The British Dental Association would become more powerful as it became more unanimous. (Hear, hear.) If there was one thing that would tend to promote the ultimate success of the Association, it was unanimity of purpose and unanimity of design—(hear, hear)—and this they had shown to the fullest possible extent by the meeting held that day in the town of Cheltenham. Evidence had been given that the Western Counties Branch was willing to subordinate itself to the rules of the British Dental Association proper, and thus whilst exhibiting a capacity for governing, it had shown also a capacity for being governed. It was impossible for them to succeed unless they were united, and this he felt sure all the members fully realised. (Applause.)

Mr. OAKLEY COLES proposed "The Press" in a felicitous and able speech, and this was responded to by Mr. Cochrane.

Mr. PARSONS proposed "The Visitors," remarking that many gentlemen had come to their Conference as visitors, but had been so pleased with what they saw and heard, that they had determined to join the Association.

Dr. PRITCHARD, of America, and Mr. WOOD, of Brighton, responded to this toast, which was the last on the list.

[WE are indebted to the columns of the 'Cheltenham Chronicle' for most of the foregoing information, the Hon. Sec. not even having had the courtesy to reply to our letter.]

ODONTOLOGICAL SOCIETY OF GREAT BRITAIN.

Mr. S. J. HUTCHINSON, the Curator to the Odontological Society, is preparing a paper which he hopes shortly to read before the Society, giving the results of a critical examination of the large collection of skulls recently added to the Museum of the Royal College of Surgeons.

ROYAL COLLEGE OF SURGEONS, EDINBURGH.

DURING the July Sitzings of the Examiners the following gentlemen passed their first Professional Examination for the License in Dental Surgery of the College :

Briggs, Frank H., Leeds.
Bromley, Francis, Hampstead.
Mason, William J., Chard, Somerset.

And the following gentlemen passed their Final Examination, and were admitted L.D.S. :

Lucas, George John, Blackheath.
Monroe, David, Edinburgh.

APPOINTMENT.

H. CHARLES SMALE, L.D.S. Eng., has been appointed Hon. Dental Surgeon to the Ardwick and Ancoats Dispensary and Ancoats Hospital, Manchester.

VACANCIES.

NATIONAL DENTAL HOSPITAL, 149, Great Portland Street, W.—Assistant Dental Surgeon. Applications by August 22nd. Candidates must be L.D.S.

NATIONAL DENTAL HOSPITAL, 149, Great Portland Street, W.—House Surgeon. Salary, £50 per annum. Applications by August 22nd. Candidates must be L.D.S.

DENTAL HOSPITAL OF LONDON.—Demonstrator of Contour and Cohesive Fillings. Salary, £50 per annum. Applications by September 29th.

Correspondence.

[We do not hold ourselves responsible for the opinions expressed by our Correspondents.]

A BENEVOLENT FUND.

To the Editor of the 'British Journal of Dental Science.'

SIR,—I notice in your last issue of the Journal you give another letter on the subject of the benevolent fund from

Mr. J. Shipley Slipper, which with one that appeared in the 'Journal of the British Dental Association' from Mr. H. Blandy, commands from me my best thanks for the interest those gentlemen take in making suggestions in support of what I introduced at the meeting of the Midland Branch of the British Dental Association at Leeds in April last. I should have written on the point in question before now in answer to Mr. Blandy, but it was my intention to have something to say at the Western Counties Branch of the British Dental Association; but as so many papers, which had been duly announced, had to be taken as read, it was impracticable for me to be allowed the privilege of making further observations thereon. I hope, however, at the forthcoming meeting of the British Dental Association at Liverpool I may have an opportunity of bringing the subject forcibly before it, and of eliciting the opinions of a large number of the members.

I am strongly impressed with the idea that no time should be lost in making a determined effort to have the benevolent fund introduced and established very soon, and no doubt this alone would induce many gentlemen to become members of the British Dental Association, because there is at once a specific benefit accruing to those members of our profession who, from unforeseen circumstances, might possibly require assistance. Mr. Blandy makes a valuable suggestion that help may be given better sometimes by voting an orphan into school than by any other means, and proposes utilising interest in Masonic circles for that purpose. As a Mason who has qualified as a governor for the Masonic charities, my votes, with those of other members of our profession who have such votes and interest, would often afford us the privilege of giving assistance to an orphan of either sex, or to the aged and distressed of either sex.

I am happy to add that I have been promised support and assistance from several members of our profession, and I am in hopes that after our meeting at Liverpool some way of substantially placing the benevolent fund on a firm basis may be effected.

I am, &c.,

J. S. CRAPPER.

White House, Hanley;
August 1st, 1882.

A WARNING.

To the Editor of the 'British Journal of Dental Science.'

SIR,—Through the medium of your Journal I wish to warn any gentleman who might be engaging himself to come

out here as Dental assistant that the ordinary expenses of living being much greater than they are in London he should take heed that his salary is to be in proportion.

I would also caution him against accepting a small salary and a percentage, unless he had a guarantee that his salary would at least come to £250 for the first year of his services.

I am, &c.,

L.D.S. Eng.

Cape Colony, South Africa;
16th June, 1882.

MONTHLY REPORT OF CASES TREATED AT THE DENTAL HOSPITAL OF LONDON,

FROM JULY 1ST TO JULY 31ST, 1882.

Extractions	{ Children under 14	395
	{ Adults	885
	{ Under Nitrous Oxide	498
Gold Stoppings		200
White Foil ditto		4
Plastic ditto		750
Irregularities of the Teeth treated mechanically		112
Miscellaneous Cases		462
Advice Cases		111
Total		3417

WILLIAM HERN,
House Surgeon.

MONTHLY REPORT OF CASES TREATED AT THE NATIONAL DENTAL HOSPITAL,

FROM JULY 1ST TO JULY 31ST, 1882.

Number of Patients attended	1374
Extractions { Children under 14.....	369
{ Adults.....	659
Under Nitrous Oxide	83
Gold Stoppings	41
Sheets of Gold used, independent of Pellets.....	39
Other Stoppings	303
Advice and Scaling	118
Irregularities of the Teeth	66
Miscellaneous.....	208
Total	1847

FRED. WM. BATE,
House Surgeon pro tem.

To Correspondents.

1. Communications intended for insertion in the ensuing number must be forwarded to the Editor, at the Office, 11, New Burlington Street, London, W. by the 8th and 23rd of the month, and must be duly authenticated by the name and address of the writer.
2. We cannot undertake to return communications unless the necessary postage stamps are forwarded.
3. It is earnestly requested of our correspondents that their communications be written on one side of the sheet only; and we also beg to call particular attention to the importance of a carefully-penned signature and address.
4. All communications relative to subscriptions and advertisements are to be addressed to the Publishers, Messrs. J. and A. Churchill, 11, New Burlington Street, London, W.
5. The Journal will be supplied direct from the office on PREPAYMENT of subscriptions as under:

Twelve Months (post free) 14s. 0d.

Post-office Orders to be made payable at the Regent Street Office, to J. and A. Churchill, 11, New Burlington Street, W. A single number sent on receipt of seven (penny) stamps.

ANSWERS TO CORRESPONDENTS.

- "EXCELSIOR."—Your experience is that of most who have tried the experiment.
- "BROTHERHOOD."—We regret to see that the Fund progresses so slowly. If you can help it by the means you propose by all means do. It should be supported by the many with small amounts.
- "WORKMAN."—Not suitable. Such disgraceful practices will die out as educated gentlemen occupy our ranks. It will be one of the greatest benefits of the new Act.

Communications have been received from the Hon. Sec. of the British Dental Association, Messrs. G. V. Ridout, E. Goodman, J. S. Crapper, J. Jamieson, jun. (Glasgow), "Excelsior," "Brotherhood," A. G. Levason (Hereford), Gabriel (Ludgate Hill), [C. Ash & Sons, Dental Manufacturing Company, J. Ritchie, J. H. Parkinson (St. Helen's), H. C. Smale (Manchester), "Workman," Sec. Royal College of Surgeons of Edinburgh, W. Bates, J. Hayes, G. Beavis, W. Tothill, J. H. Parkinson.

BOOKS AND PAPERS RECEIVED.

- 'Le Progrès Dentaire.' 'Dental Record.' 'Missouri Dental Journal.' 'New England Journal of Dentistry.' 'Ohio State Journal of Dental Science.' 'Dental Cosmos.' 'El Progreso Dental.' 'Annual Announcement of the University of Michigan College of Dental Surgery.' 'Prospectus of the Edinburgh Dental Hospital School.' 'Glasgow Medical Journal.' 'Lancet.' 'Medical Times and Gazette.' 'British Medical Journal.' 'Pharmaceutical Journal.' 'Cheltenham Chronicle.' 'L'Art Dentaire.' 'The Rhyl Journal.'

NOTICE.—We desire that it may be clearly understood that our pages are open to all for free expression of their views on matters connected with our profession. We only ask for terseness of expression and MODERATION IN TONE.

When otherwise unobjectionable, difference of political or other opinion will never be regarded by the Editor as a disqualification for the admission of any communication to the pages of the **BRITISH JOURNAL OF DENTAL SCIENCE.**

British Journal of Dental Science.

No. 351. LONDON, SEPTEMBER 1, 1882. VOL. XXV.

EVIDENCE GIVEN BEFORE THE ROYAL COMMISSION
APPOINTED TO INQUIRE INTO THE MEDICAL ACTS

BY

Mr. J. TOMES (President of the British Dental Association),
Mr. T. EDGELOW (President of the Association of Surgeons
practising Dental Surgery),

AND

Dr. QUAIN (A Crown Member of the Gen. Med. Council).

OCTOBER 21ST, 1881.

EARL OF CAMPERDOWN (in the Chair).

JOHN TOMES, F.R.S., M.R.C.S., L.D.S. Eng., examined.

Chairman.—You are a Member of the Royal College of Surgeons and a Fellow of the Royal Society?—Yes.

And you appear here to represent the views of the British Dental Association?—Yes.

Would you kindly inform us of the aims of that Association and the number of its members?—The particular aim of the Association is to offer active assistance in carrying out the spirit and letter of the Dentists Act, and also to encourage scientific investigation by the reading of papers and the kind of meetings usual with societies of a scientific character.

Does your Association meet frequently?—We have annual meetings. The Association is represented by a large representative board, consisting of upwards of forty members, which meets at least four times a year, and if occasion requires more frequently; and, moreover, we publish a monthly journal. The aims of the Association are shown in

the following extract from the Memorandum of Association :

“ The objects for which the Association is established are the promotion of Dental and the allied sciences, and the maintenance of the honour and the interests of the Dental profession, by the aid of all or any of the following :

- (a.) Periodical meetings of the Members of the Association, and of the Dental profession generally, in different parts of the country.
- (b.) The publication of such information as may be thought desirable, in the form of a periodical journal, which shall be the journal of the Association.
- (c.) The occasional publication of transactions or other papers.
- (d.) The grant of sums of money out of the funds of the Association for the promotion of the Dental and the allied sciences in such manner as may from time to time be determined on.
- (e.) The maintenance of the spirit and provisions of the Dentists Act by such lawful means as may be necessary.
- (f.) The encouragement of the Dental Benevolent Fund for the relief of decayed or necessitous members of the profession.
- (g.) And such other lawful things as are incidental or conducive to the attainment of the above objects.”

What practical steps have you taken towards assisting in carrying out the Dentists Act?—We have from time to time furnished information to the Medical Council which is entrusted with the carrying out of the Dentists Act.

Do you maintain any direct relations with the General Medical Council?—No further than as an organisation devoted to promoting the education of Dentists, and also, as I stated before, to assist in carrying out the spirit and letter of the Dentists Act as an educational measure ; but we have no authority beyond the authority of an Association which is incorporated, just as the British Medical Association is under the same conditions an incorporated association.

What kind of assistance do you render to the Medical

Council?—By furnishing them with such information as may come to our knowledge; I may give you an instance. We brought before their notice a Dental curriculum which had been in operation in the College of Surgeons of England under its Dental Charter, and we urged that that, a tried curriculum, should be as nearly as possible followed by the Colleges of Surgeons of Ireland and of Scotland which were authorised to grant diplomas in Dental Surgery under the Dentists Act.

Do you happen to know whether your recommendations were adopted by the Medical Council and urged by them on the other bodies?—The Medical Council adopted a curriculum in all essential particulars similar to that which we urged for their acceptance.

Has that curriculum been generally accepted?—It is accepted by the four licensing bodies in Dental Surgery.

Then so far as the experience of your Association goes the Medical Council has in this respect been of great use in promoting the best interests of Dentistry?—My experience, and I think the experience of the body I represent, is that great good has been effected by the Medical Council in carrying out the Dentists Act, subject to one or two exceptions which perhaps we may come to afterwards: but they are exceptions that have no relation to the action of the general body of the Medical Council, but rather bear upon an imperfect organisation. That imperfection of organisation is the main subject that I wish to bring before the attention of the Commission.

Is it your experience that the Associations of Dentists or the Colleges of Dentists have been backward in accepting the recommendations of the Medical Council in any portion of the kingdom?—No, I think that the licensing bodies, the four Colleges of Surgeons, to which I presume your Lordship refers, and to which I have alluded before, have all accepted the recommendations of the Medical Council.

Is it your opinion that the colleges accept the recommendations of the Council with the more readiness because they are merely recommendations, and are not set forth with

any actual authority?—I am quite unable to answer that question.

I think you have not told us approximately the number of members of your Association?—About 420, of whom 40 are qualified as medical practitioners, and 250 licentiates in Dental Surgery.

Is your Association mainly for London or does it extend to the provinces?—It is for the whole of the United Kingdom.

Are there any other associations of Dentists of a similar kind to your own?—I do not know of any association of a similar kind. There is a small association who call themselves “The Association of Surgeons Practising Dental Surgery.” They do not, to my knowledge, publish a list of members, but when the Dentists Act was before the House of Commons there were not more than about 100 persons who held a licentiateship in Dental Surgery conjointly with a strictly medical qualification, or who practised Dental Surgery under a medical qualification only; of that supposed 100 (and I do not think there were so many) I think 91 petitioned Parliament and 68 memorialised Members of Parliament individually, in favour of the Dentists Bill, and we have their names.

(The witness handed in a copy of the petition to Parliament and of the memorial to individual Members of Parliament.)

The petition approving the Dentists Bill was signed by upwards of 1100 Dental practitioners, viz. by

Dental practitioners who are licentiates in Dental Surgery only of the Royal College of Surgeons of England.	184
Dental practitioners who are licentiates in Dental Surgery, and also qualified medical practitioners	42
Dental practitioners who are licentiates in Dental Surgery and hold English and foreign medical qualifications also.	2
Dental practitioners who are qualified medical practitioners only	28
Dental practitioners who hold foreign medical qualifications only	17

- Dental practitioners who are qualified medical practitioners, and hold foreign Dental qualifications . . . 2
 Dental practitioners who do not hold any qualification 895

The following is a copy of the memorial to individual Members of Parliament :

Dental Practitioners Bill.

SIR,—The principle and object of the Bill now before Parliament is simply this: That a person shall not hold himself out, by the use of a distinctive title, as possessed of a special qualification to practise Dental Surgery, unless he has actually qualified himself; subject, however, to a full recognition of all existing right and privileges.

We being ourselves Fellows and members of the Royal College of Surgeons of England, or other similar bodies, therefore venture to ask your support for the “Dental Practitioners Bill,” which has been considered with very great care, and is submitted to Parliament with the concurrence and support of the most eminent members of the Surgical and Dental professions.

We are, Sir,

Your obedient Servants,

(Here follow the names of 68 qualified medical practitioners practising Dental Surgery.)

They did not all petition?—I cannot tell you, inasmuch as the Association of Surgeons practising Dental Surgery have never published a list of their members. We know that a number of men have left them and joined our Association, but they publish no minutes or transactions.

The British Dental Association, I may take it, is generally speaking in favour of the Dentists Act of 1878, is it not?—Necessarily. They are bound by their Articles of Incorporation, by the rule that I mentioned, and it is one of the Articles of Incorporation that they shall support the Dentists Act.

And they conceive that it is in the true interest of the Dental profession that it should be associated with the medical profession through the agency of the General

Medical Council?—Yes, I have never heard any difference of opinion upon that subject.

The Dentists, as such, have no special representation, I believe, on the General Medical Council?—No, they have no representation further than this, which is a very partial one. The surgical corporations are represented, and the more educated portion, if I may use that expression, the diplomaed portion of the Dentists, are licentiates in Dental Surgery of this or that College; and it may be rightly presumed (and it has been shown to a certain extent that such is the fact) that the representatives of those colleges take a considerable interest in the respective Dental departments. Sir James Paget has on many occasions shown at meetings of the General Medical Council, and of the College of Surgeon, that he was fully acquainted with all the details of the working of the Dental department of the College of Surgeons, and took a strong interest in it; but we have no direct representation.

And Dentists, as such, do not vote in any of the corporations which return members to the Medical Council at the present time?—They do not; they are simply licentiates in Dental Surgery of this or that corporation. That is the title given them by the Dentists Act. In this connection it may be stated that the Royal College of Surgeons, England, under its Dental Charter of 1859, has, since that date, had a Board of Examiners in Dental Surgery composed of surgeons and Dentists in equal numbers, that the Council of the College referred Dental questions to this Board, the report of which thereon has been, I believe, usually adopted and acted upon by the Council; and it may be further stated that this course of proceeding on the part of the College has been attended with very satisfactory results as respects the education and examination of Dentists.

Is it the opinion of your Association that you ought to be represented more directly on the General Medical Council?—The object of my presence here is to plead for a certain degree of representation, supposing any change is made in the constitution of the Medical Council; but I do not come here on behalf of my associates or myself to make any

complaint against the Medical Council as such. Whenever I speak of it I have occasion to speak of it in precisely opposite terms to those of complaint. But the reason that we desire representation is that we have seen from time to time that the Council has not been sufficiently informed upon strictly Dental matters when considering them, and if your Lordship desires it I think I can make good my case.

Can you shortly point out to us an instance?—Some little time since the Association sent in to the Medical Council a list of names of something like 400 persons, whom on high legal authority the Association believed to be wrongly registered, that is to say, that these persons had no right of registration. The Act requires that a person shall be *bonâ fide* engaged in the practice of Dentistry separately or in conjunction with medicine, surgery, or pharmacy. In the cited cases those persons, although they had returned themselves as pharmacists, or as practising Dentistry with medicine and surgery, had no right whatever to practise either the one or the other. We sent in proof of this allegation and their names were not to be found in the Chemists' and Druggists' Register or in the Medical Register; and those persons only have a right to practise medicine who are registered in the Medical Register, or to practise pharmacy who are registered in the Chemists' and Druggists' Register. The Medical Council had in the meantime taken the opinion of Mr. Charles Bowen (now Mr. Justice Bowen) as to how this phrase should be read; and although we have not seen that opinion, yet it is not contradicted that it coincided, I am not in a position to say in all its details, but mainly, with the opinion that we sent in from Mr. G. A. R. Fitzgerald, the draughtsman of the Act (Appendix No. 1, Case). The cases of these 400, with the two legal opinions, were referred by the Medical Council to its Dental Committee, which Dental Committee is empowered by the Act to ascertain the facts of such cases, and their decisions upon the facts, so far as the Medical Council is concerned is final. It does not appear that the Dental Committee have the power of determining what shall be the law applicable to the cases. The Medical Council was summoned last February to receive

the report of this Dental Committee, and then to our utter astonishment on the day of the meeting we found that in that report no mention was made of Mr. Justice Bowen's opinion or of Mr. Fitzgerald's, but a wholly new opinion, obtained from Sir Farrer Herschel and Mr. Muir Mackenzie jointly (Appendix No. 1, Case 3), was substituted, which opinion completely traversed the opinions that had been sent in to the Committee by the Medical Council. Had there been a Dentist on that Committee I feel sure that that Dentist would have remonstrated very strongly against the introduction of a perfectly fresh opinion without any reference whatever being made to the pre-existing opinions. I think that he would have had grounds of complaint had not that remonstrance been acceded to. Moreover, we who sent in the names were not appealed to to substantiate our charge, or appealed to in any way whatever, although the Committee had full power to call in our assistance, and to ask if we had any additional information to afford, and we could have given them a great deal of information. But in the absence of any one on the Committee who knew what the nature of the information might be, it was not sought. Then, when the matter was discussed before the Medical Council itself, Dr. Quain said "that the Dental Committee found there had been no fraud in any one case referred to by them." Now, what would have been pointed out, had there been a Dentist on that Council, would have been that, of the names sent in, something like 70 or 80 had withdrawn from the Register voluntarily, and as many had declined to answer any questions or to take any notice of the letters addressed to them by the solicitor on the part of the Council. I think had there been a Dentist on the board that fact would have been pointed out. Then again, a considerable number of persons had registered themselves as in practice before the passing of the Act, who had registered themselves in the Chemists' and Druggists' Register, and who had passed in pharmacy subsequently to the passing of the Dentists Act so that their declaration was incorrect; and I think that that wrong would have been exposed and time asked for further consideration had there been a Dentist on the Council.

Then, I think I may take this from you, that you do not complain that in this instance the Medical Council neglected you, but what you feel is that if the Dentists had had a special representative upon the Medical Council he would necessarily have been on the Dental Committee, and he would have put new facts before the Dental Committee, and afterwards before the Medical Council, which as you think were not brought before them, and which you think would have exercised a very important influence upon their decision?—Yes. When the matter was under consideration, Dr. Quain defined Dentistry as consisting of merely pulling out teeth, to which stopping and scraping teeth had now been added. He might with as much accuracy have defined ophthalmic surgery as merely taking out eyeballs. He gave that definition in supporting the retention on the Register of a certain number of hairdressers who had occasionally drawn teeth, but who admitted that they knew nothing of anatomy in any form whatever. I think that definition of Dental practice would have been corrected. The upshot of it was, that the Council passed a resolution to the effect that there was not sufficient evidence to justify the removal of the cited names. On the strength of that decision, and under legal advice, we laid a case before Sir John Holker, Mr. R. S. Wright, and Mr. G. A. R. Fitzgerald, a case very carefully drawn up, and we submitted as part of the case the opinion of Sir Farrer Herschel and Mr. Muir Mackenzie, and asked for their joint opinion. The consultation resulted in an opinion precisely opposite to the one accepted and acted upon by the Council, *i.e.* an opinion to the effect that the persons whose names we cited had no right to be on the Register (Appendix No. 1, Case 4). Now, if a Dentist had been on that Committee, and had had the power of speaking and of voting at the Council, some such course as the one we subsequently followed would have been proposed at the time, and the Council would have been asked to defer its decision until the legal difficulty had been cleared up. As it was the Council decided upon, and were forced as it were to accept, the ruling of the Committee, not only in respect of the facts of the cases, but in respect of the

law applicable to them. In further illustration of the want of special information on the part of the Medical Council I may mention that a counsellor at the last session said, "He thought they (Dentistry and Dental Surgery) were different things," whereas the former term, of recent American parentage (since 1842), has been used from the first as a short substitute, without any difference of meaning, for the longer and more expressive term of Dental Surgery. In this sense it is used in the Dentists Act, the two terms having been introduced therein for the purpose of alternative use, and for the avoidance of any difference of meaning.

You are evidently of opinion that it would have been of very great advantage on that occasion, and possibly on several others, if there had been a special representative of the Dental profession on the General Medical Council; would you kindly point out to me what you consider the best form of medical council so far as the Dentists' profession is concerned?—My own feeling would be in favour of two Dentists rather than one being appointed (either by the educated Dentists, that is to say, by the licentiates in Dental Surgery, or preferably perhaps by the Privy Council), whose duty it should be to attend the Council on all occasions whenever any Dental questions arose, and that they would in that position be rendered responsible for conveying to the Council whatever information was necessary in respect to the wishes and necessities, educational and otherwise, of Dental practitioners. I am not in a position to say which would be the better form of election; I have no authority to do so from the Society that I represent; but I think that supposing the attendance of the persons so elected were limited to the occasions when Dental questions were under consideration, it would not be an unreasonable thing that there should be at least two, and for this reason, that if the Privy Council appoint, they might appoint unwittingly a person who is very incompetent; but there is a far better chance of securing effective assistance if they appoint two than if they appoint only one. The same holds good with reference to an appointment made by the licentiates, the

most noisy man might get in, but if two were elected the chance of satisfactory representation would be greatly bettered.

Then you would be in favour, in short, of there being two direct representatives of the Dental profession upon the Medical Council?—I should be in favour of there being two representatives on the Medical Council, nominated by the Crown, or elected by the licentiates, the attendance being limited to Dental business.

Might it not be suggested that this member was placed in rather an inferior position as compared with other members of the Council if he were informed at the time of his election or nomination that his attendance was only required on certain specific occasions?—I think that as a Dentist's education is special and general, estimated at $\frac{3}{5}$ th general and $\frac{2}{5}$ th special, the Dentist is already well represented in respect to his general education; and what we want there is information as regards his special conditions and requirements, educationally and otherwise.

In proposing that there should be two direct representatives of the Dentists on the General Medical Council, have you taken into consideration what the total number of the Medical Council would be; are you making that proposal of two Dentists with the idea in your head that the Council will continue to consist of twenty-four?—I have no knowledge of that kind. I make the recommendation of two, because if there were one he would be as far as the Dentists were concerned despotic, and he might be a bad despot.

And he might also possibly be absent when wanted?—He might.

With regard to the question of infractions of the Dentists Acts, and how far those infractions are or ought to be dealt with by the Medical Council, does your Association take any cognisance of the infractions of the Dentists Act, *e.g.* the assumption of titles to which the persons taking them have no right, such, for instance, as that of "Dentist Surgeon" by a person who has no connection with the College of Surgeons?—It has been judicially settled already by the Court of Queen's Bench in January, 1860, that you cannot

impose any restriction upon the use of the title of Dental Surgeon until you come to a fresh race of men, and the fresh race of men are Dental Surgeons in virtue of their being licentiates in Dental Surgery. Hence it has been held that those registered persons who are already in practice, and who were in practice before the Act, could not be dealt with penally in respect of the question of title (Appendix No. 2).

Then you think that in so far as the Dentists are concerned, there are no means of enforcing the penal clauses of the Dentists Act?—No, in respect to the use of titles by registered persons, the point has been tried in the Court of Queen's Bench, and there thoroughly discussed, and has with a like result been very frequently discussed since that time, namely, by the Medical Council, by the Parliamentary Bills Committee of the British Medical Association, and by Parliament, when the Dentists Bill was in committee.

Is there anything else that you wish to put before the Commission?—In answer to your previous question I may state that the Association would prosecute a person who assumed the title of Dentist who was not on the Register; but before they can prosecute they must in each case go to the Medical Council and ask its consent.

That is because the prosecutors are the Medical Council, I suppose?—No; it was supposed that there might be some oppression exercised, to guard against which this provision was insisted upon by the Government. Supposing that we find an unregistered person calling himself a Dentist we must state the case to the Medical Council, and gain its assent before we can bring an action against that person.

That is under the provisions of the statute?—Yes; and if any alteration were made, it would be very desirable that it should be made clear that the executive committee of the Medical Council should be able to give such power, because the Medical Council meets only once in a twelvemonth. A branch council can give such power, but a branch council perhaps only meets once in a twelvemonth. So that it is very desirable that the executive committee should be able to empower us or any other persons to prosecute an individual

who calls himself a Dentist or a licentiate in Dental Surgery, he not being registered as either the one or the other. The Register records the nature of the Dental qualification, that is, whether it be the possession of the licentiateship in Dental Surgery, or rests on the fact of having been "in practice before July 22nd, 1878," and will in future record also any surgical qualification held by the registered person.

Mr. Simon.—You referred to an occasion on which the course taken by the General Medical Council seemed to your Association unsatisfactory, owing, as I understood you to mean, to the want of sufficient information?—I referred to the course taken in declining to strike off names from the Register on the authority of one legal opinion as against two or three other opinions of equal authority.

Am I correct in my impression, that, whether right or wrong, the course taken by the Medical Council was a course determined by legal advice?—By the advice, I expect, of the solicitor; but I would again call attention to the fact that the report of the committee upon which the Council acted contained no notice whatever of two high legal opinions that had been submitted, but substituted a third, which came at the last moment as a thunder-clap upon us.

I am not at all meaning to question you upon the right or wrong of the course, but only upon whether it was not essentially a legal matter, and whether the Council did not act on legal advice?—They acted on the advice of their solicitor, I believe, rightly or wrongly.

Am I right in my impression that on that occasion no question was raised requiring special Dentistic knowledge in the councillors engaged in the discussion?—I do not think that the question of Dental skill was very much considered any farther than that Dr. Quain in advocating the course of the committee, said that he should prefer submitting himself to the barbers who had no anatomical knowledge rather than to many others who were supposed to be very much more highly educated.

I take for granted that you would not insist upon a particular phrase used by a particular counsellor, perhaps not very deliberately. My point is that the Council (as a

whole) was dealing with a question which had to be determined by legal advice, am I right in that?—The Council as a whole were told, I think by the solicitor, that they could not discuss this or that question; and it was said by one member of the Council, whose name I need not repeat, that he hoped the resolutions would be so framed as to show that “the Council was simply acting mechanically in obedience to the law.” Another member of the Council said, on a later occasion, when speaking of the duties of the executive committee, “The Council was called upon mechanically, with a pistol at its head as it were, to follow the opinion (*i.e.* Sir Farrer Herschel’s) laid before it, and we simply endorsed what was laid down to us as the law by the lawyers.” The whole of my point is to show that there is a want of information and a want of well-informed Dental representatives.

You are of opinion that if there had been a member of the Dental profession attending the Medical Council as assessor he would more strongly have contested the legal view of the case?—He would have more strongly contested the legal view of the case, and he would have been able to adduce evidence which would, I think, have induced the Council to withhold its decision until the question had been more thoroughly investigated legally.

Mr. Cogan.—By the Dentists Act, foreign and colonial Dentists have a right to be registered as well as United Kingdom Dentists in a separate column, have they not?—Yes, assuming that their education is equal to that which is required of English Dentists.

The Medical Council only take degrees of certain foreign colleges?—They take the degrees of certain foreign colleges in accordance with their curricula, and in accordance with such information as their prospectuses furnish in respect of the length and character of their curricula, and in respect of the examinations and also in respect of the examiners.

Can you inform us as to what certificates or degrees of American colleges are allowed to be registered?—Those of the Harvard and Michigan Colleges alone. Our curriculum requires four years’ attendance, and their curriculum only

requires three years' attendance. The other colleges in America require perhaps only eight months' actual attendance. The examinations are conducted wholly by the teachers, and we hear very little of any rejections, and we know pretty well that persons can go to America and come back with a diploma of doctor of Dental Surgery from many of their institutions within five or six months, and sometimes within very much less time.

Would that observation apply to the University of Pennsylvania?—I cannot answer your question off-hand, but all the American qualifications and requirements have been closely analysed, and the results will be found reported in the minutes of the Medical Council. I cannot carry it all in my mind, because there are, I think, something like fifteen of them. The Harvard and Michigan Colleges are the only two institutions that require even the shadow of a preliminary education. We require a preliminary education the same as that required of a medical student.

So that there is full security, at least now, that none but a properly educated person can get on the Dental Register in this kingdom?—He must have a thorough knowledge of the whole subject of Dental Surgery; what we have contended for and what is now being carried out, is that he should have an education equal to that of a medical man, but differing in some of the details. We strike out of the medical education certain medical specialities and put our own special subjects in their stead, so that the education can be comprised in the four years, allotted alike to the medical and Dental curriculum. If you were to require that the Dental licentiate ship should be taken in addition to the ordinary medical qualification, then you must give six years for the education, which we have contended would be an unreasonable requirement from the bulk of the Dental practitioners.

Was it the fact that a vast number of names were put on the Register shortly after the passing of the Act of 1878, of persons who were by no means qualified?—A very great number indeed, and with a desire to eliminate some of them we sent in those names to the Medical Council.

At the present moment are there many of those persons still on the Register?—A great number. In the absence of a public record the Dental practitioners of the United Kingdom were, in May, 1878, on the authority of the carefully maintained private list of Messrs. Ash and Sons, estimated at about 2000. This well-known leading firm has, for upwards of half a century, supplied the larger portion of Dentists with the instruments and materials used in Dental practice; hence for the purposes of their trade they have used every available opportunity to possess themselves of the name and address of each Dental practitioner. This list included a limited number of Dentists' assistants and pupils, and of persons who, in conjunction with other callings, practised Dentistry. The initial Dental Register, 1879, contains 5289 names. Of these 2049 returned themselves as practising Dentistry with pharmacy; and if reasonable allowance be also made for the Dentists' assistants, pupils, &c., assumed and real, who have registered as having been in practice before the passing of the Act, it will be seen that the estimate of 2000, as the approximate number of the persons in actual practice, in the sense contemplated when the Act was drawn, and before the word pharmacy was added to Section 6 (c) is justified by the Register. In answer to my inquiry Messrs. Ash state "We consider that "2000 names may be fairly *added* for assistants, &c., pupils of Dentists who have taken advantage of the Dentists Act to register themselves. We regret that many others who had no such professional claim to be registered have got placed upon the Dentists' Register."

Chairman.—With reference to the question of foreign certificates, it rests with the General Medical Council, I believe, to decide as to the certificates of which of the foreign institutions should be accepted?—Yes, it is entirely in their power.

Have you ever heard of complaints coming from institutions which have applied to have their certificates recognised, and have not been successful?—I have heard that some institutions have made complaints, but members of others have expressed great satisfaction with the course taken, and they have,

moreover, said that they hope that sooner or later the course taken here will force their colleges into a higher qualification and lead to a better state of Dental education, for it is notorious that in America, both in respect to medical and Dental education, qualifications have been obtained with scarcely any knowledge of the subject of either. Confirmation of this statement will be found in 'The History of Dental and Oral Science in America, 1876,' in 'Special Report upon Medical Education and Medical Institution in the United States of America, prepared for the United States Bureau of Education,' by N. S. Davis, A.M., M.D., 1776—1876; in the address on 'The Relations of the Medical Profession to the State,' by D. B. St. John Rosa, M.D., 1879; and in 'The Address on Dental Education,' by Dr. Eliot, President of Harvard University.

Do you happen to know whether there are any Dentists of eminence who hold foreign qualifications which are not recognised, and which they think ought to be recognised?—I have not any instance in my mind at the present moment. I remember one case where a gentleman contended very strongly that a certain qualification should be recognised, but when the whole thing had been gone into he said, "I believe the General Medical Council have done quite rightly." It was argued by the institution which I represent that you could not reasonably expect a higher qualification of an Englishman than of a foreigner, and that the education which had been gradually perfecting here must be greatly lowered if you registered a great number of the foreign Dental diplomas; and we wish to have the education increased in completeness and not lowered to meet on terms of equality a lower standard.

To take the case of France, are the certificates of many of the French Dental colleges accepted?—I do not know of the existence of one.

Is there in France no such thing as an institution which gives certificates?—No, I think not.

Do you happen to know whether there are any such institutions in Germany?—I think there is at least one, but their requirements are at present very slight. One of their

representatives was present at the Medical Congress, and he gave rather a lamentable account of their requirements, and hoped that better times would come, and said that he looked upon the Congress as a great means of heightening the degree of education that would be ultimately required of Dentists.

We know that governments abroad are very particular with reference to the qualifications of medical practitioners; but can you tell us whether foreign governments are lax with regard to the qualifications of Dentists?—At present I believe they are, but I think in almost every country now some effective step in this direction has lately, or is about to be taken. For example, in France, Germany, Spain, Switzerland, Canada, New Zealand, &c.

Prof. Turner.—Then are we to understand that the Dental practitioners in France and Germany are qualified medical practitioners?—They are either qualified medical practitioners, or, I believe, with the exception mentioned in respect of Germany, without any qualification whatever, just as they were here formerly, that is, before the passing of the Dentists Act, when not one *bond fide* practitioner in twenty had any qualification.

The General Medical Council has, I think, to frame regulations connected with the registration of Dental students?—Yes.

And the General Medical Council has also, I think, to approve of a Dental curriculum?—Yes.

And to approve of the subjects of the examination of Dentists?—Yes.

So that in your judgment it would be advisable that when those Dental questions are under consideration in the Council there should be some one there who should advise the Council as to the facts?—Yes.

Would you propose that this representative of the Dentists at the Council Board should sit there as a counsellor, that is to say, as equal in position to the other members of the Council, or merely as an adviser, or referee?—I should place him on an equality with the counsellors on Dental questions, and give him a vote on Dental questions.

You would give him a vote and a deliberative power?—
Yes.

On such questions only?—Yes.

And he should be on all Dental committees?—Yes; but as I have already stated, I myself should be rather adverse to there being only one representative.

Mr. Simon.—Has it occurred to you whether you would extend that same principle to any other of our professional specialities; whether for instance you would have representatives of ophthalmology on particular occasions admitted to the Council?—Certainly not, inasmuch as they do not require that additional, very distinctive, and separate education that renders a Dentist efficient, and without which he is utterly useless. Furthermore, while Dental practitioners are counted by thousands the representatives of any other medical specialty may be counted by tens.

THOMAS EDGELOW, M.R.C.S., L.R.C.P., examined.

Chairman.—You are a Member of the Royal College of Surgeons and a Licentiate of the Royal College of Physicians?—I am.

And you have been requested by the Association of Surgeons Practising Dental Surgery to lay their views before us?—That is so. I appear as the President to express their views.

Will you kindly tell us the objects with which your Association was established?—Our Association has been established entirely with the object of raising the status of the Dental profession, and amongst the rules that we have, the first is that nobody can be a member of the Association unless he is on the Medical Register; we do not admit any one who is on the Dental Register unless he be on the Medical Register as well, and the only qualification for our Association is that the person shall be on the Medical Register.

Prof. Huxley.—And that he has had a complete medical education?—Quite so.

Chairman.—What steps have you taken to carry out the

object of your Association, viz. the improvement of Dental education?—We try to make our views known amongst the profession as much as possible, and we hold meetings at specified times. We have certain points that we give very great prominence to, which I could, with your Lordship's permission, briefly lay before you.

Do you hold any relations with the General Medical Council?—We have no relations with the General Medical Council.

Do you ever bring cases or facts with relation to medical education before their notice?—Our views have been brought from time to time before the General Medical Council by the secretary.

With regard to the General Medical Council, Dentists as we know have no direct representation upon that body; has your Association any strong opinion with regard to that point?—I cannot bind the Association to the opinion which I am going to give you; I had not time to get a Council meeting to answer that question as regards the whole Association. For myself, I can only say that I feel that a Dentist, as a Dentist, would be out of place upon the Medical Council. If he is there as a registered member of the medical profession I understand his position, but I do not understand his position there only as a Dentist.

And you individually think that it would be inexpedient to allot a special seat upon the Medical Council to the Dentists' profession as such, as apart from the institutions which now return members to the Council?—I do entirely think so.

Are you content with the present constitution of the Medical Council?—Personally I am.

And you can state to us the views of your Association upon that point?—My belief is that I am representing in these particulars the views of the Association.

Then virtually you have no especial remark to make with reference to the Medical Council in its relations with the Dentists?—No, beyond the fact of my believing it to be inexpedient, as I have mentioned, to have a Dentist, as a Dentist, on the Medical Council, and in that I believe I

represent the views of the Association, though I cannot speak positively upon the point.

Does your Association approve of the indirect control which is exercised by the General Medical Council over Dentists generally under the Dentists Act of 1878?—Our Association would be very glad if the Medical Council had more complete control, and could deal with the names of those who are on the Dentists' lists, as they would do if they were at liberty to exercise their own judgment.

Then your Association approves the objects which the Act of 1878 had in view, namely, the establishment of a relation between the Medical Council as representing the highest controlling body of the medical and the Dental professions?—If that implies that our Association at the time approved of the Dentists Act, it did not. We opposed in many particulars the Dentists Act when it was passing through Parliament, but without success.

Would you mind repeating to me the points which seemed to you objectionable in that Bill as it was at that time?—It seemed to us that under that Bill Dentists are allowed to call themselves surgeons whether they be on the Medical Register or not. That is a point which our Association have the strongest feeling about. We feel that no one has any right whatever to call himself a surgeon with or without any adjunct word unless he be upon the Medical Register, that is, unless he has a qualification entitling him to be placed upon the Medical Register. We object as much to a man calling himself a surgeon oculist or a surgeon aurist, unless he be on the Medical Register. I have at the present moment in my pocket a current paper with an advertisement in it in which some one who is not on the Medical Register (the name is immaterial), describes himself as "surgeon and practical Dentist." There the public is absolutely misled. The man is not on the Medical Register at all, and I think that in the interests of the public they ought to know whether a man who calls himself a Surgeon-Dentist is a surgeon or not.

Was that the main ground for the dislike entertained by your Association to the Bill of 1878?—It was one main

ground. Another main ground was the great number of men whom we considered absolutely unqualified who were allowed to register under that Act; and we feel that as regards that Act it would be a very great thing for the protection of the public if there were a double list made, containing on one side the names of the licentiates in Dentistry, and on the other side those who have no qualifications whatever. At the present time they are all mixed together, and nobody can tell whether or not a man had any qualification before he was put on the Register. Numbers are on the Register who confessedly have no right to be there, and whom an unsuccessful effort has been made to remove.

Prior to the passing of that Act, those unqualified persons could, and I suppose did, practise as Dentists?—They were supposed to do it, but we believe that numbers got on who had no more qualification than a man who opens your door to allow a visitor to come in or out.

Then you hold that, at all events, under the cover of that Act those persons have obtained a status which prior to the passing of that Act they had not?—Precisely so.

That is the main ground of your objection?—Yes.

Was it legal prior to the passing of the Act for a person to style himself “Surgeon-Dentist?”—That is a point upon which there is a difference of opinion. Before the year 1878, there was a case before the late Lord Chief Justice, who decided that he had no power to stop a man calling himself “surgeon” in conjunction with some other name, although that man was not on the Medical Register.

Will it be possible in future for persons imperfectly qualified to attain admission to the Dentists’ Register?—Persons who are not licentiates in Dental Surgery, that is to say, those who have not taken what we consider the minor qualification, cannot be placed on the Dental Register in future, and undoubtedly that is a valuable safeguard, and I cannot help saying that it is a very good thing indeed that the Act has been passed, though we object to those men who are not qualified being swept in by its provisions. But we aim at something higher, and that is, at having Dentists qualified as medical men as well.

Then your objection to the Act of 1878 is that thereby privileges were created in favour of certain existing persons, and your objection is not to the Act as it will work hereafter?—Certainly, as regards raising the status of the Dental profession generally, but I do not think that that would touch the question of the use of the word “surgeon.” The main thing that we object to is that anybody should be allowed to use the word “surgeon” in conjunction with another word unless he is upon the Medical Register, and is entitled to place his name there by virtue of holding those qualifications.

How would you propose to remedy that defect in the Act?—By a clause in the new Medical Act stating that in future nobody shall be entitled to use the title of “surgeon” or “doctor” in conjunction with any other word whatever unless he be on the Medical Register or have a qualification which is registrable on the Medical Register.

Would you propose to allow a person who was possessed of the qualification of the College of Physicians in Edinburgh, and who also had qualified as a Dentist, to style himself “Surgeon-Dentist?”—Might I answer that by putting a question? Would such a person be allowed to practise any other branch of surgery under similar existing circumstances? If that is the case, I say yes, if not, I say no.

Then may I take it that your objection to a person styling himself “Surgeon-Dentist” is not that he is not a member of the College of Surgeons, but that he is a person not on the Medical Register?—It is so.

Are there any other defects in matters of what I may call a penal nature to which you wish to call our attention, and to which the Act of 1878 does not in your opinion sufficiently attend?—I know of none.

Are you of opinion that it would be expedient to place the Dentists under a separate and special Act, and to govern them by a separate Medical Council of their own?—Dentists, as Dentists, if they are to be separated from the medical profession, I think had far better have their own absolute guidance and be left entirely apart from the medical profession. If they seek for a separate status as Dentists they should be ruled by Dentists.

Should you yourself be in favour of separating Dentists from the remainder of the medical profession?—Since the Act passed I should be in favour of separating Dentists *qua* Dentists from the remainder of the medical profession; but I should strongly object to surgeons who wished to practise Dentistry being cut off from the body of the profession.

Would you give the number of members of your Association?—Fifty-five, and ten honorary.

Mr. Simon.—You take great exception to the use of the term “Surgeon-Dentists” for persons who are not members of the College of Surgeons; in the judgment of Lord Chief Justice Cockburn, to which you referred, was not the view taken by him that “Surgeon-Dentist” was a compound word in the same way as the expression “veterinary surgeon” is a compound word, and that a man calling himself a Surgeon-Dentist was not calling himself a surgeon?—That view was taken, and that is why I wish that the new Act should expressly state that that view could not be taken in future.

And was it not alleged that from time immemorial the expression “Surgeon-Dentist” had been used as a compound word, and had not been understood to encroach at all upon the province of surgeons?—I am not sufficiently up in the judgment of the Lord Chief Justice to give an answer to that question.

As regards the other point to which you referred, viz. the indulgence which when the Act passed was shown to persons already in practice, and which brought upon the Register a certain number of persons whom you considered very indifferently qualified, if you had had the making of that Act, what other principle would you have adopted, if any, than the principle which was adopted, of admitting to the first Register all persons who were already *bonâ fide* in the practice of Dentistry?—I felt the difficulty so much that I am bound to say that I opposed the Act as strongly as I could when it was passing.

And yet you think that the Act has been of advantage and is of advantage to the profession of Dentistry?—I think it will be hereafter. At the present moment I can hardly say, having regard to the mixed people that are registered, that

the profession is at present particularly raised by it. I believe that it will undoubtedly be ultimately raised by it as soon as those men of whom I speak have in course of time died out.

You are of course familiar with the fact that in all analogous legislation (for instance, on the passing of the Apothecaries Act in 1815) whenever a first register has had to be made, persons already *bonâ fide* in the position for which provision has had to be made, have been recognised as being entitled to registration?—I quite admit the whole difficulty.

So that, in fact, unless that had been done, a first register could not have come into existence?—No, but I think it might have been made a little more exclusive.

Professor Huxley.—Did I correctly understand you to say that you would desire legislation of such a nature as to forbid any one to practise Dentistry who is not on the Medical Register?—No, I did not mean to say that at all.

You did not wish that?—No, not at all, only to prevent persons calling themselves surgeons who are not surgeons. I do not want to touch their right to practise as, or to call themselves Dentists, but I think that no one ought to call himself surgeon-oculist, or Surgeon-Dentist, or surgeon anything, unless he be entitled to be on the Medical Register.

Chairman.—We had here just now the representative of the British Dental Association, has your Association the same objects as the British Dental Association?—I think that the British Dental Association would differ very strongly from my view about the word “surgeon.” I think they would like all those who are on the Dental Register to be allowed to call themselves Surgeon-Dentists. That is the main point of difference. We have to recognise legislation which has taken place. The Dentists Act has passed, and we recognise it, but we wish in future, if possible, to have some means by which the public can know whether or no a man is a surgeon who calls himself a Surgeon-Dentist, and whether when he calls himself a “Surgeon and practical Dentist” it means that he is a surgeon. In this case that I am referring to, of the man whose advertisement I have in my pocket, he is no surgeon at all, and he advertises and calls himself a “Surgeon

and practical Dentist.” The public gather from that that he is a surgeon, but he is not a surgeon, he is not on the Medical Register at all.

RICHARD QUAIN, M.D.

Chairman.—Is there anything further that you wish to mention to the Commission?—I would venture to suggest that it would be very desirable to amend the Dental Act. A great mistake has been made in appointing the general body of the Medical Council to carry out the details of this Act. In the Duke of Richmond’s Bill there was a clause which gave the Council power to appoint a board that would have carried out all those details without imposing the duty on the Council. This board could have carried out those details in an inexpensive form. The Council according to the Duke of Richmond’s Bill could have made rules which, when approved by the Privy Council, would have had the force of law. Instead of which the Dentists have chosen to adopt the Medical Act of 1858 as a model, an Act the amendment of which is the very subject under your consideration. It would be very desirable that the Act should be amended in accordance with the principle contained in the clause of the Duke of Richmond’s late Bill (Clause 22, Medical Act, 1858, Amendment Bill, H.L.), and that in any amended Act there should be power taken to divide the Dentists into two classes, those who have a qualification by examination, and those who are only qualified on their own declaration. The Council is threatened with law proceedings on the subject. If it could be possible under the Amended Act to follow the example set in the Act obtained by the Veterinary Surgeons in the last session, in which all registered persons are divided into two classes, one, those who have obtained qualifications by examination, and the other by their own declaration, there would be an end of the present contention. The contention is that the Medical Council should take off the names of 400 people who have been put on the Register on their own declaration of being engaged in the practice of

Dentistry prior to the passing of the Act. Their claim depends upon the interpretation of a very ill-worded section of the Act, and if this could be settled under an Amended Act by the persons registered being put into two divisions, it would be an advantage.

Any person who chooses to call himself a practising Dentist is entitled, is he not, to have his name put on the list?—Yes coupled with the declaration that he is engaged in Dentistry or Dental Surgery. One of the questions which has arisen is whether a man who extracts 500 or 600 teeth a year, and who has been a dresser in a German hospital, can declare that he is a person *bond fide* engaged in the practice of Dentistry.

REPLANTATION OF TEETH.

By W. H. WATSON, L.D.S., Richmond, Canada.

EIGHT years ago I was led to the consideration of this subject by observing one of our leading Dentists experimenting on a rather difficult case of irregularity, necessitating removal and transplanting in the front superior maxilla. From thinking, I tried action, and five years ago performed my first trial.

Young man, aged 24. Superior right second bicuspid, post. approx. cavity; abscess on apex of root. Extracted this tooth gently, excised abscess, cleansed and filled thoroughly root and crown, washed out periosteal cavity, warmed tooth in water (blood heat), and replaced. Had tooth on either side for support and good occlusion of lower jaw. Saw patient at odd intervals. Came two years ago and said he thought the filling was out; examined and found all correct, only first bicuspid pushing forward a little, and so making a space, which he thought was a cavity; tooth firm as any other in his head. Saw him again in December, 1881. All right.

Appended below I give a list of cases attended since :

No.	Name.	Date.	Age.	Tooth.	How affected.	Present condition.
1	Mrs.	Nov., 1877	35	Lr. Rt. 2 M.	Caries and isolated	Most satisfactory.
2	Miss	Sept. 29, 1880	23	Up. Lt. 2 B.	„ abscess	
3	Mr.	Mar. 22, 1881	25	Up. Lt. 1 B.	„ sensitive	
4	Mr.	Mar. 31, 1881	19	Up. Rt. Cen.	„ abscess	
5	Mr.	Jan. 4, 1882	21	Lr. Rt. 2 M.	„ „	
6	Mrs.	April 11, 1882	40	Lr. R. Can.	„ severe ex.	
7	No. 4.	June 20, 1882	34	Up. R. Can.	„ extensive	
8	Mrs.	July 28, 1882	37	Lr. R. Can.	„ abscess	
9	No. 8	Same date	37	Lr. R. 2 B.	„ „	

This last case I heard from this day. The teeth can be moved very slightly, but the patient eats with the two teeth as well as ever, and she has no discomfort from them. Now Case No. 4 was a bad case of irregularity. Central incisors lapped awry over each other, after extracting one I half turned the other in its socket, filled it, and then filled the extracted tooth on both sides, drilling through from one cavity to the other, inserted and fastened with ligatures of floss silk. With regard to Case No. 7, I might state that the patient was under chloroform, as he was having out several bad molars. I had the canine out and filled while he was under anæsthesia, and was tying the ligature when he came thoroughly to.

The above are, of course, only a few cases, yet why not let similar be many? Some will say, why extract when we can treat the pulp and draw down any alveolar abscess? Well, my answer is perhaps so, but the treatment is too often fully as heroic as the above-mentioned mode, and in many cases not half so successful. We, situated in the country, need not mention a six weeks' treatment of alveolar abscess to our patients. With cautiousness, let me say it, I do not approve of "destroying nerves" or devitalising the pulp; in half these cases abscess supervenes at some future day. If I can cap "let me cap." In exceptional cases I will "destroy," but in *difficult cases* I will *remove and reinsert*, provided always the patient is agreeable. I admire the patience of Dr. Magit ôt, whose example I would fain copy,

and am strengthened by him in pursuing this *not heroic*, but humanitarian, treatment of otherwise lost useful members of a too sadly weak system. Further, I venture to affirm that, under ordinary conditions, due care being taken in the manipulation and after treatment, no one need fear for a safe, speedy, and sure result. Dr. Taft's remarks upon a similar operation (p. 404, 'Operative Dentistry') are very applicable here.

I shall not further trespass on your space, but should this bring out the thoughts of a few on a question which to me lies before us in a greater measure yet, I shall be gratified.

FATAL TERMINATION OF A SINGULAR ACCIDENT.

Two months ago, Mr. F. B—, while out angling on the Tweed, laid down to rest himself and fell asleep. He suddenly awoke, and found that he had partially swallowed five teeth and the gold plate that held them. He ran to Dr. Cameron, who, finding it impossible to pull them up the throat, pushed them down and relieved Mr. B— from being suffocated. Next day he went to the Royal Infirmary, Edinburgh, where for several weeks he received the ablest treatment, and returned to his home. The plate and teeth remained in the body, however, and he gradually sank until death intervened, inflammation of the throat being the proximate cause.—*Glasgow Evening Citizen*.

THE Town Crier at Eastbourne amused and astonished the visitors on the Grand Parade on Tuesday morning by the somewhat fearful, and the certainly unusual, announcement that some one had lost a portion, at least, of a set of false teeth! Quite a titter ran through the crowd as the cry of such a loss rang out its pathos. An ample reward for speedy restitution was promised, and it may be hoped that before the evening dinner hour the Dental handiwork found its owner.—*Southern Weekly News*.

British Journal of Dental Science.

LONDON, SEPTEMBER 1, 1882.

ROYAL COMMISSIONERS' INQUIRY INTO THE MEDICAL ACT.

THE blue book of the minutes taken by the Royal Commissioners as to the working of the Medical Act, 1858, is in our hands, and shows some important evidence relating to Dental matters, given by Mr. Tomes (as President of the British Dental Association), Mr. Edgelow (as President of the Association of Surgeons Practising Dentistry), and Dr. Quain, a member of the General Medical Council. Like evidence on almost every subject there is vast discrepancy, and a considerable amount of opinion incorporated with facts.

It has always been a matter of deep regret to us that Mr. Tomes, who has so thoroughly and consistently laboured for the general advance of the profession, freely sacrificing his own comfort, liberally and ungrudgingly devoting his time, energy, and means to this object, should have become so intimately associated with the "Purgation-of-the-Register-at-any-price" party. There is a littleness about it that seems unworthy of one whose ordinary ideas are so liberal and comprehensive. Could the Register be *really cleansed*, it would be quite a different matter, but that is admittedly impossible. Taking roughly Mr. Tomes' own figures, 2000 computed as "in practice," allowing a further 2000 for "pupils, assistants, and apprentices," and there yet remain on the Register upwards of 1500 names unaccounted for; out of this number on what system of equity were "the 400" only arraigned before the Medical Council? Is it that the other 1100 deserved it less? or is it merely because having used the form "with pharmacy" there was more certainty in tracing inaccuracy? It seems to be entirely ignored by this party that the Act allowed *all* to register who were

"*bonâ fide* in practice" as *Dentists*. Proving, however conclusively, that "the 400" were not pharmacists in nowise *disproves* their *bonâ fides*. Given an Act so ambiguously worded that the "*highest legal opinions to be obtained*" are diametrically opposed to one another as to the meaning of its phrases, and without its offering the remotest clue to the signification of the mysterious phrase "*bonâ fide* in practice," and what wonder that many blundered and many took dishonest advantage of the opportunity thus gratuitously offered. We agree with a writer in the 'Chemist and Druggist' who tersely expressed himself thus:—"I have not much sympathy with those unqualified chemists' assistants who secured a place on the Dental Register. But still less with those Dentists who do not seem to know how to draw up an Act of Parliament, to understand one when it is drawn up, or to abide by a contract when it is fairly made."

Here is the gist of the whole thing. The Act *has* passed, its clauses *are* most dubious, therefore, unless undoubted evidence of intentional fraud is forthcoming, it is better to candidly admit that what is *is*, and is as it is by the bungling phraseology of the Act itself, than to attempt to make invidious distinctions on grounds really foreign to the subject. All may rejoice that, at all events, the back door to "Dentistry or Dental Surgery" is closed for ever.

Mr. Tomes's recommendation that there should be two representative Dental members in the General Medical Council, to join in all matters of Dental interest, is a glorious one, and nothing would give us greater pleasure and satisfaction than to see himself there as ONE. We, however, quite endorse his opinion that there should be another, because he might himself be "despotic" without even being aware of it. "If, after the Dental Committee found there had been no fraud in any one case referred to by them," Mr. Tomes had been there to have pointed out "that, of the names sent in, something like seventy or eighty had withdrawn from the Register voluntarily," we should have appreciated some one else being there to have explained that this simultaneous *volition* had been prompted by what a member of the Council stigmatised as an unwarrantable

interference from without, in the nature of a letter purporting to emanate from the British Dental Association, and sent by post, we believe, to *each* of "the 400," threatening with all the pains and penalties of the law those who did not withdraw their names. The wonder is that such an intimation or intimidation, coming from a powerful monied body to individual young men, practically without means to defend their doubtful reading of a new and obscure Act, did not work more powerfully on the involuntary fears of a greater number.

Mr. Tomes's concluding evidence is a severe blow to surgeons (pure and simple) who may think of practising Dentistry, and rather tends to prove that there should be a college complete in itself for training, examining, and licensing Dental Surgeons; for why should gentlemen, members of the College of Surgeons, but lacking "that additional, very distinctive, and separate education that renders a Dentist efficient, and without which he is utterly useless," be longer allowed to have the legal right to prey upon a deluded public which "is absolutely misled."

Mr. Edgelow's chief trouble and uneasiness of mind seemed to arise from what he considers an improper use of the word "Surgeon" whether in conjunction with any other word or not. He admitted that his opinion differed from that of Lord Chief Justice Cockburn, who had given a judgment in a contrary direction, and based his opinions on a terrible "bogie," which, fortunately, although he twice mentioned that he had it in his pocket, he was not asked to produce. This was an infelicitous and possible unique example, being an advertisement wherein some one describes himself as "surgeon and practical Dentist" and he considers "there the public is absolutely misled" (and so do we), because his name is not on the Medical Register at all, and so we equally expect it would be if it thought because a man's name *was* on the Medical Register he must be a "practical Dentist." We think Mr. Edgelow's mind is unnecessarily troubled in his anxiety for the "public," whom we regard as being far too enlightened to be "misled" into believing the ordinary expressions of "Dental Surgeon," "Surgeon-

Dentist," or "Veterinary Surgeon," imply that the possessor is necessarily on the Medical Register, any more than if ordered to put on a horse-leech it would procure a horse and a leech for that purpose. In theory, we grant, Mr. Edgelow is in the right, that all Dentists should have full medical *as well as Dental* knowledge. But in practice this is an impossibility except by lapse of time and the improved education now imposed. This we have persistently pointed out.

Dr. Quain, however, makes a practical and business-like suggestion, viz. That the Dental Register should show at a glance who have qualifications and what they are, in contradistinction to those who have none whatever. Could this be carried out, as we have before suggested, it would stimulate those with any energy and ambition to become qualified, and thus gradually do away with evils all alike deplore.

LIVERPOOL MEETING OF THE BRITISH DENTAL ASSOCIATION.

As was anticipated, the annual meeting of the British Dental Association at Liverpool was a brilliant success, and shows plainly the great advantage that will arise from its formation when it has settled down to its regular work. It is not altogether encouraging perhaps to find such a heavy list of arrears as £160 out of a total roll of something short of 500 members, especially now that it is in the hot flush of its youth, when it may be presumed that its members are enthusiastic. As far as we are aware, too, the executive has no powers beyond moral suasion to assist it in collecting these amounts which tend to make the funds look flourishing on paper. We cannot help thinking that the tendency of its rulers to drift into legal expenses has deterred many, holding liberal opinions, from joining its ranks, and that now that it seems likely to assume its more legitimate functions there will be a corresponding influx of members; certainly such an exceedingly pleasant meeting as the last should encourage many to enrol themselves.

It is a rather curious coincidence that the legal storm

should collapse just as the late able President's term of office expired, and a fortunate one too, as it gives the present President a fair field on which to shape his course, untrammelled by preconceived aims, and if we may judge by several important points of divergence in the arrangement of his inaugural address, there is likely to be a year of liberality and material progress under his leadership. We notice with pleasure that in his address the "promotion of Dental science," "publication of journal, occasionally transactions and other papers," and the "formation of a benevolent fund," all *precede* the "maintenance of the spirit of the Act." Does this portend peace, progress, and propriety? We trust so, particularly as he laid considerable stress on the "supply of that element of social and professional intercourse so essential to the well-being and to the future development of the profession."

BENEVOLENT FUND.

Now that the great political events of the Dental year are off men's minds, we do earnestly trust that some may lend both ear and help to the very distressing case we are appealing to the profession to alleviate. We do not ask large sums, but do beg that the charitably disposed will not only aid themselves, but draw the attention of their assistants to the matter in hand. The good that can be done by small amounts is well shown by the kind effort of the Dental Manufacturing Company, as may be seen in our list of this issue, and the right spirit is illustrated by a letter which will be found on p. 879. May it be remembered that "Whilst the grass grows the steed starves."

TO PREVENT NAUSEA.—To prevent nausea when taking impressions let the patient rinse the mouth thoroughly with camphor and water; five drops of spirits of camphor to a wine-glass of water is sufficient in most cases. Have used it so long and so successfully that we supposed everybody used it until a few days since, when in conversation with several dentists we learned that no one of the number had ever tried it. One suggested that "it perhaps gave the mucous membrane something else to think of for the time being."—*New England Journal of Dentistry.*

Manipulative Miscellany.

All instruments or articles wished to be described under this heading are requested to be sent *for inspection* to the publishers not later than the 8th and 23rd of each month, they can be returned in a few days. Where, from the size or otherwise, this is impracticable, a clear and minute description will be sufficient; the sole object being to give practitioners a description of everything new on its own merits, and without any intention or wish to pit one against another. All makers, vendors, and inventors, are invited, with strict impartiality, to contribute towards this end.

ECLIPSE PLATINUM AMALGAM.

MR. J. JAMIESON, jun.'s, Eclipse Platinum Amalgam has now been under our notice close upon twelve months, and we feel justified in stating that, so far as such a short time enables us to speak of its qualities, we can do so in its favour. Those fillings which have been seen lately are standing well, their colour is good, and there is very little staining of the tooth structures. We are fully aware that the time is far too brief to speak authoritatively as to its permanent usefulness but its promise is good, and our object in referring to it is the hope that any gentlemen who may have been using it may favour us with the results of their experience and observations.

PLASTER IMPRESSIONS.

WE have been informed and have tried with the most satisfactory results the plan of soaking a plaster impression in *soapy* water until perfectly saturated. The plaster may be poured whilst the impression is still reeking wet, there will be no air-blows, and when hard the impression will part with the greatest ease, and other models may be made from the same matrix. We prefer to colour the soapy water, so as to make a distinctive line of demarcation between impression and cast.

TEMPERING FINE EXCAVATORS.

It may be new to some, and certainly useful to those who are unaware of it already, to know that all fine excavators may be both hardened and tempered to a most excellent cutting yet tough temper by holding the points and thin parts of the shanks in a *spirit* flame—not gas, as the sulphur deteriorates the steel—until of a good blood heat, then suddenly and vigorously waiving it through the air at arm's length. By this simple process the two operations of hardening and tempering are performed at once; the fine cutting part receives the first chill and is unusually hard, keeping a good edge, but the thicker steel cools more slowly, and is therefore more of a spring temper within, two effects most desirable to obtain. Unfortunately except for very fine points it is unavailable.

CLEANING THE BURRING ENGINE.

WHEN any of the centres and sockets of the burring engine become clogged with hardened oil, &c., a drop or two of pure spirits of wine—not methylated—run into the joint will readily dissolve the thickened and dried oil, and a little turning of the machine will work both it and any dust out of the joints so that it may be wiped away. It is advisable to allow the spirit a few minutes to evaporate before applying fresh oil. When this is done the ease of working will well repay the trouble incurred.

TOOTH DRAWING.

It is not only in this country that the Dentist's chair is dreaded. Republican teeth ache as severely as do the teeth of the slaves of a haughty Monarchy. There, too, it appears that a fiend in the guise of a Dental surgeon thrusts a miniature steel crowbar into the most delicate facial nerve, inflicts horrible anguish, and smilingly asks you whether you find it

“a little sensitive?” Thus it is that sufferers who “dare do all that may become a man,” shrink from the Dentist. It happens, however, that rather than submit themselves to the Dentist, men will readily torture themselves, and the ways in which they do so are various. To tie an end of a string round the tooth, and fasten the other end to the handle of a door, is a popular method, and an operator has been known to connect his tooth and the bullet in a pistol barrel by means of a stout wire, the consequence being that he nearly decapitated his wife by a species of chain shot when the weapon was discharged. This was unscientific, however, for the precise force of the bullet, and consequently the power of the wrench had not been calculated, leaving out all question of the wife; but a more careful operator, a Mr. T. R. Wilkinson, has, according to the ‘New York Times,’ approached the subject of tooth-drawing with much more care for accuracy. He had worked out and proved by arithmetic, and also by algebra, that the precise strength necessary to draw his aching tooth without pain, and with ease and certainty, was contained in the fall of a fifty-six pound weight, attached to the tooth by one yard of copper wire, and this he designed to drop from the second-story window of his house. Being an exact man, he made his preparations with scientific caution; placed the weight on the window sill, clung on to a large bed in the room with one hand, and with the other hand, which held a long stick, pushed the weight into space. The result was even too complete. Not merely the aching tooth, but several adjoining masticators and a handsome section of jaw, were likewise torn away by the falling weight, and this, descending on the head of a gentleman who happened to be passing the house, seriously fractured his skull. Mr. Wilkinson and his victim are both in the hospital, and they make two converts to the opinion that when a man wants to have teeth out, the Dentist is, perhaps, after all, the best man to perform the operation.—*Evening Standard*.

Dental News.

OUR STUDENTS' NUMBER

Will be published on the 15th of this month. It is earnestly requested that all information respecting Dental Schools (not already sent) may be furnished without further delay, and that the printed slips forwarded for revision have the necessary alterations made *thereon*, to avoid errors likely to occur whilst selecting details from lengthened prospectuses.

THE BRITISH DENTAL ASSOCIATION.

WE are indebted to the 'Liverpool Daily Post' for the following interesting account of the second annual general meeting of the members of the British Dental Association, which commenced Aug. 25th, 1882, in the rooms of the Liverpool Medical Institute, Mount Pleasant, the use of which was granted for the purpose. Mr. T. Underwood, L.D.S. Eng., the Vice-president of the Association, presided in the unavoidable absence of the President, Mr. John Tomes, F.R.S. There was a large attendance of about 100 members and some 40 visitors. Letters expressing regret at inability to attend the meeting were read from Messrs. J. Tomes, F.R.S. (the President), Edwin Saunders, and others.

The CHAIRMAN, at the commencement of the proceedings, said he was sorry that their excellent President was unable, owing to the illness of his brother, to be present at the meeting. He had begged him to express his extreme regret at his inability to attend that, the second meeting of the Association, the first one having been held in London.

The TREASURER (Mr. James Parkinson) reported that the subscriptions due on 1st January last amounted to £124; the balance in bank was £311 18s 6d; arrears, £160 13s; cash at interest, £150—being a balance of close upon £630, minus the subscriptions in arrear. The report was formally adopted.

Mr. J. S. TURNER, B.D.A., the Hon. Secretary, next read

his report, which dealt with the formation of the Association in 1880, and gave an interesting sketch of its progress, its incorporation under the Companies Act, and the establishment and successful conduct of the Association journal. The report went on to state that during the past year advantage had been taken of the sittings of the Royal Commission on the Medical Acts to make known the wants of the profession and to defend the position they had attained. The evidence of their President, as well as that of the president of another association, would be published as soon as the blue-book came to hand, and the members would then be able to form an opinion of their relative value. The numerous fresh cases of infringement of the Dentists Act which were continually being brought before the Business Committee, as also the infringement of the rules of the Association, had so far been met by moral force. Now that the Medical Council had left them to their own devices, the secretary hoped they would be able to attend more diligently to all such cases. Since the publication of their list of members in January, they had had thirty new names added to their list, and at present they stood on the verge of a roll of 500, and that number would be increased by ten or twelve by the elections at the present meeting. The publication of the journal of the Association had been of much service, and the Publication Committee and the Association at large owed a deep debt of gratitude to Messrs. Walker and Coleman for the energetic and careful way in which they had piloted the journal through the first stages of its existence.*

The report was adopted on the motion of the Chairman, who considered it was most satisfactory.

It was unanimously resolved to hold the next annual meeting at Plymouth, on the 24th and 25th Aug., 1883.

The CHAIRMAN suggested that, as they had chosen Plymouth for their next meeting, they should nominate Mr. Charles Spence Bate, F.R.S., of that town, as President elect for the ensuing year.

A motion to this effect was unanimously carried, on the motion of Mr. VANDERPANT, seconded by Mr. WOOD (Brighton).

Mr. T. UNDERWOOD was re-elected Vice-president, and returned thanks for the confidence reposed in him.

The valedictory address of the retiring President, Mr. John Tomes, F.R.S., was then read by Mr. Underwood. It dealt at considerable length and with much minuteness with a dispute which existed between the Association and the

* [It was some eight or ten years old when bought by the British Dental Association, so not quite in its infancy.—ED. 'B. J. D. S.']

Medical Council respecting the inclusion in the Dentists' Register of persons engaged in a calling which was not recognised in the Dentists Act, and which calling barred them from registration in the Dentists' Register. The Association had sought to obtain the correction of the Register, and failing this, had requested the Medical Council to take a judicial decision on the point. To this request the Executive Committee of the Medical Council had replied that it rested with the Association to obtain a judicial decision, and accordingly it now remained for the Association to decide whether, under the circumstances, any, and, if any, what further steps should be taken for the furtherance of a correction of the Register. The President concluded his address by remarking that a general review of the past year gave ample proof of prosperity and success, but, in leaving the presidential chair, he desired to call the attention of the Association to the too obvious fact that there were hostile influences which it would be the duty of the President and Representative Board to carefully watch, and if need be, to antagonise. This watchfulness would be especially necessary when the promised Medical Bill came before Parliament. Of all their enemies, however, the one they had most to fear was apathy in their own ranks. (Applause.)

A vote of thanks was cordially passed to Mr. Tomes for his services as President during the past year.

Mr. H. CAMPION then moved, and Mr. R. ROGERS seconded, the following resolution:—"The British Dental Association, while it wishes to express its gratitude to the Medical Council for the many and highly-important services rendered to the Dental profession in past sessions, views with deep regret the renunciation on the part of the Council of the judicial powers conferred upon it by the Dentists Act in favour of following a personal leading in respect to even entering upon a consideration of the correction of the Dentists' Register."

The motion was carried, as was also one to the following effect, moved by Dr. WAITE and seconded by Mr. BROWNLIE:—"That the Hon. Secretary be directed to forward the foregoing resolution to the Registrar of the General Medical Council, with a request that he will lay it before the Council."

Mr. F. WEISS moved, and Mr. F. I. VANDERPANT seconded, the following resolution:—"That this meeting hereby expresses its continued confidence in the Representative Board, and thinks that, with the co-operation of the President and Business Committee, the Board will continue its efforts to further the objects of the Association."

The motion was carried, after which the Chairman introduced Mr. HENRY CAMPION, M.R.C.S. (Manchester), the President elect, who then took the chair and delivered an address.

After returning thanks for his election, he stated that the Association was established for the promotion of Dental and the allied sciences, the maintenance of the honour and interests of the Dental profession, by periodical meetings, the publication of a journal, and occasionally of transactions and other papers, the formation of a benevolent fund, the maintenance of the spirit and provisions of the Dentists Act, and other things incidental or conducive to the attainment of the above objects. In order to supply that element of social and professional intercourse so essential to the well-being and to the further development of their profession, he thought one of their first efforts should be to make their meetings as attractive as possible, in the hope that all the members of their profession in the immediate district in which the meetings were held would thereby be ultimately induced to join the Association. After going fully into the benefits to be derived from the Association, he warned them not to expect too much from the Dentists Act, which, although it gave them certain privileges, was designed as much, or even more, for the protection of the public than for benefit of the profession. (Applause.)

At the afternoon sitting papers were read by Mr. C. S. Tomes, F.R.S. (London), on "Some of the Scientific Problems of Dental Surgery;" by Mr. W. Bowman Macleod (Edinburgh), on "Mechanical Dentistry, its Progress and Probabilities;" by Mr. A. Coleman (London), on "Cases of Dead Teeth treated by an Antiseptic Process;" and by Mr. J. S. Crapper (Hanley), on "A Benevolent Fund in Relation to our Profession;" by Mr. F. CANTON (London), on "Neuralgia in the Jaw."

THE ANNUAL DINNER.

The annual dinner of the Association took place in the evening, at the Adelphi Hotel, and was largely attended.

The President (Mr. HENRY CAMPION) occupied the chair, and was supported right and left by the Mayor of Liverpool (Mr. John Hughes), Mr. J. Smith Turner, Hon. Secretary of the Association, Captain Rogers, Dr. Gee, Mr. W. B. Macleod, Mr. H. Sewill, Mr. A. J. Woodhouse, Mr. S. Wormald, Mr. C. S. Tomes, Dr. Glynn, Mr. A. Coleman, Dr. Simpson, Major Stewart, Dr. F. Heath, Mr. A. L.

Rymer, Mr. Edgar Browne, Mr. C. Vasey, Mr. T. Dilcock, and Mr. T. I. Moore. Amongst the other gentlemen present were Mr. T. Underwood (Vice-President), Dr. Pollard, Dr. Braidwood, Dr. Walker, Dr. Kish, Dr. R. H. Johnson, Captain Newman, Messrs. W. Heath, H. C. Quinby, Oakley Coles, M. Quinby, J. G. Roberts, F. J. Paul, R. White, J. Parkinson, T. Dawson, &c.

After the usual loyal and other toasts had been suitably received,

Mr. A. COLEMAN proposed "The Manchester School of Medicine," which was responded to by Dr. SIMPSON.

Mr. J. OAKLEY COLES, in a humorous speech, gave "The City and Trade of Liverpool," remarking that it was a felicitous circumstance that the first meeting of the Dental Association in the provinces should be held in Liverpool, whose chief magistrate they were very glad to see present. (Applause.)

The MAYOR, in responding, eulogised municipal institutions, which he said they ought to prize a little more than they did. As the chief magistrate of the city, he was glad to welcome the Dental Association, and to extend the hospitality of Liverpool to the members. (Applause.)

Mr. A. J. WOODHOUSE next gave "The President," which was responded to by Mr. CAMPION in an eloquent address, in the course of which he referred to the success which had attended their first meeting in the provinces.

Mr. C. S. TOMES gave the "Liverpool University College and School of Medicine," which was responded to by Dr. GLYNN.

The other toasts were "The British Dental Association and Branches," proposed by Mr. EDGAR BROWNE, and "The Hon. Secretaries and other Officers," proposed by Mr. R. WHITE.

On Saturday 26th, at nine o'clock, there were practical demonstrations in the rooms of the Liverpool Dental Hospital, Mount Pleasant, which were watched by a large number of members of the Association and others; and at eleven o'clock the ordinary business was begun at the rooms of the Liverpool Medical Institute, Mount Pleasant. Mr. Henry Campion, M.R.C.S. (Manchester), the President, occupied the chair, and there was again a large attendance.

Mr. HENRY SEWILL, M.R.C.S., L.D.S. Eng., read a paper entitled, "The Etiology and Pathology of Dental Diseases; what we know, and what we would like to know." He asked at the outset whether the teeth of the more highly civilised nations, or of certain classes within those nations, were structurally deteriorating—a question that was being

constantly asked, and as constantly answered emphatically in the affirmative by observers whose opinions are entitled to respect. They state that at the present time it is extremely rare to meet with children possessing jaws and teeth superior in development to those of their parents, and that it is the rule to find the opposite prevail, the dental organs of children, in the vast majority of cases, being of markedly inferior formation. This opinion being expressed, various hypotheses are started to account for it. On *a priori* grounds some argue that it is only what might be expected. A high standard of physical comfort implies comparative disuse of teeth and jaws. The advance of the art of cooking has rendered food so soft that it calls for little chewing. Disuse of the organs of mastication leads in time to their wasting; characteristics of parents are transmitted as hereditary characteristics to their progeny, until at length a deterioration brought about in the individual becomes a family defect, and a generation is produced with ill-developed maxillæ and imperfect teeth. This argument is supported by the observations of Mr. Mummery, who found well-formed jaws and good teeth in British burying places of pre-historic man of the stone ages; a very considerable proportion of ill-formed and crowded jaws, with apparent deterioration of the teeth, as evidenced by the presence of caries, in the Celts who succeeded; and still further deterioration in the jaws and teeth of the period of the Roman occupation—a period of great comparative luxury. Against this reasoning it is pointed out that certain Asiatic races, who live on soft vegetable food, have well-made jaws and good teeth. Therefore disuse of the organs of mastication will not in itself account for the alleged dental inferiority of the present day. In support of the main argument that dental deterioration is progressing, it is further alleged that the demands upon the vital powers by the growth of the brain and nervous system, and especially their increased exercise in modern life, influence the development of the dental apparatus. This is an argument of perhaps cardinal importance, as education is pushed keenly during the very period of second dentition. If there has been any general physical deterioration of the people inhabiting our islands within late years, it must probably be due to such causes as the aggregation of great masses of the population in towns, the sanitation of which is imperfect, and in the occupation of great numbers of men, women, and children in the vitiated atmosphere of crowded and ill-ventilated workshops and factories. On the other hand, the great bulk of the British were never before so well-sheltered, so well clad, so well provided with food and the smaller

luxuries of life; and this is especially true of the agricultural classes, from whose ranks the townfolk are largely recruited, and whose dwellings a generation back were a national disgrace. Never before was the public health so well cared for, and never was there such comparative freedom from most diseases which leave their mark on the constitution of the victim and lead to degeneracy in his descendants. He would venture to suggest that if the organs of mastication are deteriorating, the cause in this country, at least, could not be assigned to general decay. In the people of the United States there could be no doubt of the inferiority of the teeth, for the evidence was overwhelming, and the teeth seemed worse as the ascent was made in the social scale. After a survey of the whole ground, they must admit that on the subject of dental deterioration they had few solid facts; they knew that some hereditary diseases, which interfered with the due development of all the parts derived from the epiblast, lead also, in many instances, to imperfect formation of the tooth tissues. Mr. Sewill then proceeded at considerable length to determine whether organic dental deterioration was really progressing at the present time, and, if so, whether this could be associated with any general or local physical changes.

Mr. J. S. TURNER, Hon. Secretary, read a paper by Mr. S. J. Hutchinson, M.R.C.S., L.D.S. Eng., in the unavoidable absence of the author, on "The Dental Diploma: what it is, and what it is not." The substance of the paper was to the effect that the L.D.S. was a license to use the name of "Dental Surgeon" or its synonyms; but it was not a license to practise medicine, surgery, or pharmacy, nor to practise as an apothecary. The advantage of Dental surgeons being also M.R.C.S., where the means and opportunity allowed it, was strongly advocated.

In a discussion which followed, Mr. Shillinglaw referred to the administration of gas during Dental operations, and said they could count the number of accidents resulting from its use on three or four fingers. Medical men, when asked to be present during such occasions, often confessed their ignorance of gas.

Mr. COLEMAN thought the greatest care should be exercised in giving gas, and, as a rule, a medical man ought to be present.

Mr. STOREY (Hull) said they could not call in medical men to administer gas without charging high fees from their patients, which would be found objectionable by those Dentists whose practice was mostly confined to the middle and lower classes. It might be all very well in London to

charge high fees, but he did not think it would do in the provinces. (Hear, hear.)

Mr. SEWILL said they must not lose sight of the fact that there had been attempts to widen the field of Dental Surgery, and he strongly deprecated this tendency. Regarding the use of gas, he thought a Dental Surgeon was justified in giving it provided he was prepared for every emergency and had some one present to assist him if required. Legally he was quite entitled to give it, but if his patient was dying, and he had to run out of the house for a surgeon, and came back and found the patient dead, his conscience must prick him in the future. He did not think there was any difficulty in defining the limits of Dental Surgery. In conclusion, he reminded them of the axiom, the translation of which was "Let the cobbler stick to his last." (Laughter.) Let the Dentist stick to his forceps.

Mr. GADDES said Mr. Hutchinson deprecated the administration of constitutional remedies, but even in the local administration of a remedy the physiological and therapeutic action of that remedy was not a local thing, it was constitutional. The question, therefore, of administering a remedy one way was not so easily distinguished from a local application of a remedy.

The discussion was continued by Messrs. Vasey and Smith Turner.

The CHAIRMAN said he thought at the present time they should do all they could to conciliate the general practitioners, and not offend them in any way (hear, hear). The Dental surgeons were passing through a stage at present which was very important for the further development of their profession, and, therefore, they should not bring themselves into collision with the general practitioners.

Mr. OAKLEY COLES also read an elaborately prepared and deeply interesting paper on "Dental Literature," after which the thanks of the meeting were heartily accorded to those who had contributed papers.

The CHAIRMAN then moved the following resolution, which was carried unanimously:—That the members and officers of the British Dental Association hereby record their deep sense of gratitude to the Council of the Liverpool Medical Institute for the generous manner in which their building has been placed at the disposal of the Association during their annual general meeting, and they hereby request the Honorary Secretary of the Reception Committee to convey this resolution to the Council of the Medical Institute."

The CHAIRMAN also moved a vote of thanks to Dr. Waite,

the Hon. Secretary of the Reception Committee, and the motion was warmly passed.

Dr. WAITE, in returning thanks, alluded to the services of Major Stewart as a member of the committee, and also moved a vote of thanks to Mr. J. Smith Turner, the Hon. Secretary.

Mr. OAKLEY COLES seconded, and the motion was carried by acclamation.

The CHAIRMAN, in closing the meeting, said that the results they had achieved had never been exceeded at any previous meeting. He felt certain that whenever the name of Liverpool was mentioned it would bring to their recollection much kindness they had received. (Applause.)

The proceedings then terminated.

THE ASHENHURST FUND.

	£	s.	d.
Mr. Wheelock (assistant)	0	1	0
R. E. W.	0	1	0

Per Mr. Rutterford:

Mr. W. H. Shears	0	5	0
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Per Dental Manufacturing Company:

	£	s.	d.		£	s.	d.		£	s.	d.
A. J. W.	1	0	0	E.	0	1	0	A. J. B....	0	2	6
W. H. W.	1	0	0	A. B. T..	0	1	0	H. H. G.	0	5	0
R. H. W.	1	0	0	Prossen...	0	2	6	W. T.....	0	10	0
A. C.....	0	10	0	J. L.	0	7	6	G. H. J...	0	2	6
B. C.....	0	5	0	W. W. ...	0	2	6	R. C.....	0	5	0
W.....	0	1	0								

Dental Manufacturing Company's Employés:

	£	s.	d.		£	s.	d.		£	s.	d.
R. B.	0	5	0	M. S.	0	1	0	T. P.....	0	1	0
W. A.	0	2	6	T. A. B. ...	0	1	0	H. A. E....	0	1	0
P. C. J. ...	0	1	0	R. S.	0	5	0	H. B. S. ...	0	0	6
A. B. C. ...	0	0	6	P. R.	0	0	6	W. H.....	0	1	0
T. M.	0	1	0	C. D.	0	1	0				

APPOINTMENT.

WALKER, FRANCIS DRURY, L.D.S.I., has been appointed Hon. Dental Surgeon to the Yorkshire Institution for the Deaf and Dumb at Doncaster.

Correspondence.

[We do not hold ourselves responsible for the opinions expressed by our Correspondents.]

HELP FOR THE WIDOW AND ORPHANS.

To the Editor of the 'British Journal of Dental Science.'

SIR,—Why do not all employers (as you suggested) ask their assistants for one shilling for the above fund? They will all give if their employers will only ask them, and forward the money. I enclose one shilling from Mr. Wheelock (another assistant). I only wish I had a lot of assistants, you should have a "bob" from each of them.

Yours, &c., GEO. BEAVIS.

[We wish most heartily our correspondent's suggestion would be generally acted upon by EMPLOYERS. Assistants do not see or realise the sad condition of a widow left helpless with five children to support or we feel sure their shillings would flow freely to her relief.—ED.]

To the Editor of the 'British Journal of Dental Science.'

SIR,—Mr. Gaine and myself were, I believe, the only Bath Dentists present at the Cheltenham meeting. Your report gives the name John "King," which is evidently a mistake.

Yours, &c., JNO. HAY.

2, Prince's Buildings, Bath, August 25, 1882.

[We were entirely indebted to a local newspaper for the particulars of the Western Counties Branch meeting, the Secretary not having favoured us with any authentic list of gentlemen present, which must be our apology for all inaccuracies.—ED.]

To Correspondents.

1. Communications intended for insertion in the ensuing number must be forwarded to the Editor, at the Office, 11, New Burlington Street, London, W. by the 8th and 23rd of the month, and must be duly authenticated by the name and address of the writer.
5. The Journal will be supplied direct from the office on PREPAYMENT of subscriptions as under :

Twelve Months (post free) 14s. 0d.

Post-office Orders to be made payable at the Regent Street Office, to J. and A. Churchill, 11, New Burlington Street, W. A single number sent on receipt of seven (penny) stamps.

ANSWERS TO CORRESPONDENTS.

F. D. WALKER should bring the advertisement he has sent under the cognizance of the Council of the Royal College of Surgeons in Ireland, of which College the advertiser is a Licentiate. We believe it is entirely against its bye-laws and conditions of licentiate-ship.

“ANON.”—We think you are mistaken as to the make of the article you condemn. Perhaps you had a bad specimen. Anyway, the style of your letter is not that which we could publish, although the matter, if as you think, should decidedly be exposed.

G. BEAVIS.—Your offer is generous; but there is no wish to press on a few. Such a case as Mrs. Ashenhurst's should be supported essentially by assistants by many small donations. Could we reach the ears of the assistants, as a body, there would be no lack of small amounts. We wish we could get at them.

Communications have been received from Messrs. F. D. Walker (Doncaster), W. Hern, G. Beavis, W. Stringfield, “Anon.,” J. Hay, J. Ritchie, G. W. Rutherford, “Workman,” G. Morrison (Delavan, Wisconsin).

BOOKS AND PAPERS RECEIVED.

Revue Odontologique.’ ‘Giornale di Corrispondenza per Dentisti.’ ‘Anales de la Sociedad Odontologica de la Habana.’ ‘Le Progrès Dentaire.’ ‘L’Odontologie.’ ‘Vierteljahresschrift des Vereines deutscher Zahnkünstler.’ ‘El Progreso Dental.’ ‘Journal of the British Dental Association.’ ‘American Journal of Dental Science.’ ‘Report of the Royal Commissioners appointed to inquire into the Medical Acts, 1881.’ ‘Lancet.’ ‘Medical Times and Gazette.’ ‘British Medical Journal.’ ‘Pharmaceutical Journal.’ ‘The Chemist and Druggist.’ ‘Daily Journal of the British Medical Association’s Fiftieth Annual Meeting.’ ‘Prospectus of Westminster Hospital Medical School.’ ‘Prospectus of Edinburgh Dental Hospital and School.’ ‘Prospectus of National Dental Hospital, London.’ ‘Southern Weekly News.’ ‘Banbury Advertiser.’ ‘Delavan Republican.’ ‘Glasgow Evening Citizen.’ ‘Liverpool Mercury.’ ‘Liverpool Daily Courier.’ ‘Liverpool Daily Post.’

NOTICE.—We desire that it may be clearly understood that our pages are open to all for free expression of their views on matters connected with our profession. We only ask for terseness of expression and MODERATION IN TONE.

When otherwise unobjectionable, difference of political or other opinion will never be regarded by the Editor as a disqualification for the admission of any communication to the pages of the **BRITISH JOURNAL OF DENTAL SCIENCE.**

British Journal of Dental Science.

No. 352. LONDON, SEPTEMBER 15, 1882. VOL. XXV.

ON THE PROCEEDINGS OF THE LAST FOUR YEARS.

AN ADDRESS DELIVERED AT THE SECOND ANNUAL GENERAL MEETING OF THE BRITISH DENTAL ASSOCIATION, HELD AT LIVERPOOL ON THE 25TH AND 26TH AUGUST, 1882.

By JOHN TOMES, F.R.S., the Retiring President.

IN vacating an office in the discharge of the duties of which high responsibilities have been involved, it is of some consequence that a clear statement of the relevant professional events of the lately past years should be made, in order that the Association and its President for the coming year may have a distinct concise view of those past proceedings, which will, of necessity, influence its action in the immediate future. This casting back is rendered necessary, on account of the many incorrect statements made and the course subsequently, and, perhaps consequently, taken by the Medical Council at the late session, in respect to the administration of the registration clauses of the Dentists Act; a course which the Association, seeking as it does, equitable, as opposed to a timid or mere technical administration, was not prepared to expect.

I will ask for a little indulgence in the narrative of events, reaching back to 1878, for I shall fail to make the present position understood unless I recur to the consecutive steps by which it has been brought about. But the retrospect shall be limited to those occurrences which directly bear upon the question which will occupy the attention of the Association. To this end free use must be made of the minutes of the Medical Council, and I may remind the Asso-

ciation that those minutes are published for the use of the public, and that acts therein related are fair subjects for wise and just criticism.

Shortly after the passing of the Dentists Act, July 22nd, 1878, its administration was entered upon by the Medical Council. The Executive Committee of the Council met on August 7th, 1878, and passed the following resolutions:—

(a) The Committee, having considered the Dentists Act (1878), and the necessity of receiving at once the names of those who apply for registration, and having taken the opinion of Mr. Ouvry on the question, authorised the Registrar to begin the preparation of a Dentists' Register, for the approval of the Medical Council, and to receive, in accordance with the provisions of Section XVI of the Act, a Fee of Two Pounds from every person who applies for registration before the 1st of January, 1879, and a fee of Five Pounds from every person who applies for registration after that date.

(β) The Registrar having submitted to the Executive Committee certain forms for carrying out the Registration of Dentists in conformity with the Dentists Act (1878),

Resolved:—That the forms of registration be submitted to Mr. Ouvry for his approval.

The whole of these papers, including a form for a "Dental Registration Certificate," were accordingly at once laid before Mr. Ouvry by the Registrar, and with a few suggested modifications, were, thereafter, widely circulated throughout the United Kingdom, the Dental Reform Committee taking five-eighths of the first edition of 4000 copies (on undertaking to pay for the same), and sending them to addresses previously ascertained.* The Registrar reported that he had provisionally registered 930 Dentists.

Here, then, we have an undisputable proof that all the papers and forms used in connection with registration were so used with the fully expressed approval of the Council's solicitor, Mr. Ouvry,† and amongst those papers was one

* Report by the Registrar on Dental Education. Minutes of Medical Council, October 17th, 1878.

† Messrs. Farrer and Ouvry, solicitors of the Medical Council.

requiring that the candidate for the registration under subsection (c) should declare whether he was in the *bond fide* practice of Dentistry "separately or in conjunction with medicine, surgery or pharmacy."

On October 17th, 1878, the Council considered in detail the form of the Dentists' Register, and the form was then determined, subject to the approval of counsel, upon the single point whether or not a distinct column should be set apart for the entry of medical and surgical qualifications as additional and higher qualifications.

At the same sitting the following resolution was passed:—"That the names of those to whom Certificates of Registration have been issued by the General Registrar be entered by him in the Dentists' Register, and that the entry bear the date of such *provisional* Registration."

It was at the same time resolved:—"That the first printed edition (of copies, that is) of the Dentists' Register be published as soon as possible after the first day of August, 1879," this being the last day upon which unqualified practitioners could obtain registration, and after which the Register closed, to all who were without a recognised Dental qualification.

On October 18th the Dental Committee, under Section 15 of the Act, was appointed, and the session terminated with the following resolution:—"That the Executive Committee be directed to carry out generally the provisions of the Dentists Act, in accordance with the resolutions agreed to by the Council." In fact all the details had been determined excepting the question of a separate column for higher qualifications, the several questions respecting Dental education upon which the Executive Committee was requested to obtain information, and upon certain other questions respecting colonial and foreign qualifications.

The all-important Register had thus been formed, which, be it remembered, never leaves the custody of the Registrar. (See Section 11, 4 of the Act.)

On the 19th of October the Committee directed the Registrar to answer an inquiry to the effect that he is bound to enter in the Dentists' Register any person who signs the declaration in the schedule to the Act, "and to append

thereto a copy of the penal Section 35 of the Act," thus casting the responsibility upon the claimant coupled with a threat of punishment for fraud. It will be afterwards seen that this direction was not fully acted upon.

At the next meeting, November 8th, 1878, of the Executive Committee, steps were taken to obtain the opinion of Mr. Charles Bowen on a point upon which the Council itself was specially authorised to adjudicate, and upon which a legal practitioner, unless very intimately acquainted with all the relations of a general medical and of a special Dental education, was incompetent to form a just opinion. There is no evidence in the opinion given and inserted without the case in the minutes, November 8th, 1878, that Mr. Charles Bowen had any intimate knowledge of the respective educational details. The opinion is that higher qualifications in Dentistry should alone be registered, but Mr. Charles Bowen does not say that medical, pursued as additions to the special, qualifications do not, in effect, institute a higher knowledge of the general subjects embraced in Dentistry.

On December 11th, 1878, it is stated in the minutes by the Registrar that he has entered, under Clause (c), Section 6, 1403 persons who had declared themselves to have been practising Dentistry separately; and 815, in conjunction with the practice of either medicine, surgery, or pharmacy. So that up to this date no doubt had been entertained as to the meaning of the section which, under legal contortion, has since given so much trouble. Indeed, a resolution was passed at the meeting on January 8th, 1879, to the effect that the grounds of claim for registration in conjunction with medicine, surgery, or pharmacy, should be indicated in the Register by the respective initial letter M., S., or P. At the next following meeting (Minutes, January 31st, 1879) it was, at the request of the Dental Reform Committee, determined that the words themselves instead of their initial letters should be inserted in the Dentists' Register. The minutes of this date, January 31st, also contains the Registrar's Report, wherein he says that he has brought the first stage of the Dentists' registration to a fairly successful close. "Up to the last day of the past year, when the time of regis-

tration for the lesser fee of two pounds ended, the number of persons completely registered was 4637," which, with incomplete cases, will make a total of 4725.* As to the care with which he had conducted the business of registration, the Registrar makes the following statement :

" Having been apprised by the legal adviser of the Council, whose advice has been carefully sought and acted upon from first to last, that his duties in connection with the Dentists Act were purely ministerial—to see, that is to say, that the terms of registration laid down in the Act were fully complied with, and that he was bound to register all applicants who, on their own responsibility signed the declaration in the schedule, the Registrar has done his utmost to ensure that the forms for registration under Clause (c) of Section 6 should be filled up with scrupulous accuracy; and, accordingly, these forms present for such further investigations as may be prosecuted hereafter, a complete series of data, showing in the attested signatures of the applicants, that they declared themselves to have been at the date of the passing of the Act '*bonâ fide* engaged in the practice of Dentistry, or Dental Surgery, either separately or in conjunction with the practice of medicine, surgery, or pharmacy.' "

At the meeting of the Executive Committee, March 5th, 1879, it was resolved that the Registrar " be directed to have the Dentists' Register set in type and published as soon as possible. Read: a case drawn up by Mr. Ouvry, and opinion thereon by Mr. Charles Bowen, in regard to the Dentists Act (1878), obtained for the guidance of the Executive Committee." The nature of the opinion is not here referred to, but that it was confirmatory with the course taken in registration admits of no doubt, for the President, at the meeting of the Council, March 18th, 1879, in his opening address, says :—" There is a class of persons now practising Dentistry which will not, after the 1st of August, be again reckoned among English Dentists, what these do now they will up to that date continue to do. Hairdressers,

* The number of entries in the Register completed on August 1st, 1879, is 5289.

perfumers, jewellers, blacksmiths, and others, have hitherto exercised the function of tooth drawing. The law has not hitherto hindered them from doing so. If any of them, however, have fraudulently or incorrectly obtained registration as *bonâ fide* in practice, 'either separately, or in conjunction with the practice of medicine, surgery, or pharmacy,' it will be your duty to expunge their names from the Register." This is followed by an account of the steps to be taken in order to legally effect the erasure of such names.

The President was no doubt speaking with the authority of Mr. Charles Bowen's opinion confirmatory of the general course taken in registration, fresh in his memory. The opinion has not been published, but its details were freely spoken of, indeed the points therein embraced were from an early date an open secret. That the words "the practice of medicine, surgery, and pharmacy," meant the legal practice of those subjects, and that persons who combined the practice of Dentistry with callings other than those mentioned in the Act were not registrable, constituted the most important points of the opinion, and it was to these no doubt the President alluded in his address. He acknowledged the responsibility of correcting the Register which, from the course pursued in registration, would of necessity require correction. The Bill as drafted for us and as it passed the Commons made it necessary that applicants should satisfy the Registrar of the justness of their claim to registration.* At the suggestion of the Medical Council the Government removed all our registration clauses, and substituted those of the approved Dental Section of the Government Medical Bill, and thereby allowed persons to register on their own representation, with a view to their subsequent removal from the Register should their claims on investigation prove to be false or fraudulent, for which investigation a Committee is provided, the findings of which are final. In the one case means were provided for the prevention of incorrect regis-

* Clause 7 of Bill passed by the Commons:—"No name shall be entered in a Register under this Act except of persons authorised by this Act to be registered, nor unless a Registrar be satisfied by sufficient evidence that the person claiming is entitled to be registered, &c."

tration, in the other incorrect registration was allowed and means were provided for its subsequent correction.

The registration of unqualified practitioners closed on the 1st of August, 1879, and late in the following October copies of the Register were for the first time issued to the public. The claim under which each person was admitted to registration was therein stated. The astonishing number of 2049 persons were entered as "In practice (with pharmacy) before July 22nd, 1878." On examining the Chemists' and Druggists' Register it was found that the names of about a fifth of the number of persons registered were absent therefrom, who could not therefore legally practise pharmacy. They could practise only as assistants or pupils under cover of a registered practitioner, who was himself responsible for their proceedings while in his employment. The opinion of counsel (Mr. G. A. R. FitzGerald's) was taken as to whether such persons were entitled to be registered in the Dentists' Register, and the opinion being in the negative, the names, with a copy of the case submitted and the opinion thereon, were, in the discharge of an obvious duty, sent in to the Medical Council, June 15th, 1880, with the allegation that as the persons named, not being registered as pharmacists, could not legally practise pharmacy, they therefore were not entitled to registration and should not be allowed to remain on the Dentists' Register. This was the sole point of our case, viz., that the practice of medicine, surgery, and pharmacy mentioned in the Act, mean the legal practice of those subjects, and that those engaged in the pursuit of any other subjects are not registrable. The whole question came before the General Council, July 15th, 1880. The cases sent in by the Association were referred to the Dental Committee, and "the cases relating to the Dentists' Register submitted for the opinions of Mr. Bowen and Mr. FitzGerald, and their opinions thereon" were read by the Registrar to the Council "in private," and their subsequent insertion in the minutes was negatived by a vote of 12 against 7. On the motion of Dr. Quain, the Council, in error as we think, referred the foregoing opinions to the Dental Committee; for that body is not empowered by the

Act to go beyond the investigation of the facts of cases of questioned registration.

From the minutes of the Dental Committee of December 17th, 1880, we learn that Mr. Ouvry attended and submitted to the Committee a statement in regard to the cases referred to him at the preceding meeting, October 29th, 1880, and that "the Committee having considered Mr. Ouvry's statement, then drew up a report on the said cases." Nothing is said as to the nature of the statement referred to, but the meeting was held on the 17th, and Sir Farrar Herschel's opinion, of which we have heard so much, is dated December 14th. There can be but little doubt that the statement contained an account of this opinion. The General Council met on February 3rd, 1881, when the Report of the Dental Committee was read and entered on the minutes, together with the lately obtained opinion of Sir Farrar Herschel. The case submitted by the Association was found by the Committee to be correct, viz. that in the vast majority of instances the names of the persons in the list sent in were not upon the Chemists' and Druggists' Register at the time they, for the purpose of registration, declared themselves to be in the *bonâ fide* practice of Dentistry with pharmacy, before the passing of the Dentists Act. They were found to be engaged in a calling which is not recognised in the Act, and not being recognised, its pursuit, according to Mr. Charles Bowen and Mr. FitzGerald, barred them from registration in the Dentists' Register. This is the whole of our case. The Committee went into other questions, such as the amount of practice done by individuals, the antecedent history of their practice, and in one or two cases the amount of Dental knowledge they possessed, but with these questions we have nothing to do.

Of the legal opinions referred to the Dental Committee by the Council no notice is taken in the report, but the opinion of Sir Farrar Herschel and his junior is appended thereto, and amounts to a direct contradiction of the opinion given by Mr. C. Bowen and Mr. FitzGerald, and indirectly condemns the course taken by the Council under the sanction of Mr. Ouvry, in making any inquiry whether a person

practised Dentistry separately or in conjunction with either of the three specified subjects. The recognition by the Government of Mr. Bowen's great judicial powers and his consequent elevation to the bench, seemed to have produced in the mind of the Executive Committee distrust in his opinion; for the principal questions, which Mr. Bowen had answered in 1879, were asked Sir Farrar Herschel in 1880. The President, who, at the opening of the previous meeting, reminded the members of their duty in the erasure of the names of hairdressers, jewellers, &c., was silent, and the solicitor, Mr. Ouvry, reminded the Council that it had no power to discuss the facts of the cases reported upon, and the feeling produced seemed to be that the last taken opinion must be similarly regarded. Several members objected to the course prescribed to them, and talked of the mechanical obedience exacted by the legal adviser, but without effect. The dictum of Sir Farrar Herschel, that the words of the Act "either separately or in conjunction with medicine, surgery, or pharmacy," are without meaning, and should in the administration of the Act be wholly disregarded was accepted, and the Council passed a resolution to the effect that as we had not produced evidence showing that the persons cited on our list were not in *bond fide* practice as Dentists, the removal of their names could not be ordered (Minutes, February 3rd, 1881). In truth the resolution declined to do a thing we did not ask should be done, and altogether ignored the discussion of, and action on, the question we proposed. The acceptance, without argument, of one opinion in preference to another, of equal if not superior authority, in reality left the question we proposed undetermined.

(To be continued.)

APPOINTMENT.

MR. WALTER J. CHEENEY has been appointed Honorary Dentist to the Accrington Dispensary.

British Journal of Dental Science.

LONDON, SEPTEMBER 15, 1882.

TO DENTAL STUDENTS.

It is our pleasure at this time of the year to address a few words to the students, words of encouragement to those who have already experienced the work of the past year, and words of advice to those who are about to enter upon their new career. To those who commence their studies at the coming session, let us urge them to think over what is before them. By organisation a far greater amount of work can be accomplished than without it, and this we hold is one of the greatest foundations for study.

A perusal of the calendars will show what subjects will be treated during the session: that obtained, let each subject have its allotted consideration. The question of special time for reading is one that cannot be determined, for it has been found that many find their brains better able to grasp and retain abstruse subjects at one period than another. The one may find that the early morn, immediately after sleep, will enable him to enter upon deep study; another, the surroundings, such as the library of a general hospital, and a third, the evening, when the day has been passed attending lectures and physical exertion has rendered the body somewhat exhausted, a quiet room is sought, and the appetite for knowledge will be found to be the keenest. It is well not to devote too long a time to any particular form of study. Anatomy, for instance, calls upon the brain to retain words, situations, and forms; physiology, functions, processes, and reasoning. Physiology therefore comes as a relaxation to anatomy, and so on.

Turning to the practical work at the Dental hospitals, we would urge our young beginners not to be in too great a

hurry ; whether it be a simple cleaning case, or the difficult gold filling, it is fatal to the uninstructed to work against time. Failure in our manipulations is always due to the want of known precautions. Against this assertion it may be urged that a restless patient will prevent the successful carrying out of any design. No matter what case it be, we recommend a careful and thorough examination to be made before anything is done.

Again, never allow diffidence to stand in the way. Every gentleman who has undertaken the post of instructor will freely give every information, and we may state that there is a feeling of peculiar pride when he finds his young friends developing into finished operators. An end is obtained by many means, so the student must not be confused if a number of processes are suggested. Advantage will be gained if each process is faithfully carried out, and notes of each made for future reference.

The first year having passed there are many who reflect upon what progress they have made, and not unfrequently disappointment is felt when they recall the number of failures that have occurred at their hands, or the existing inability to satisfy their ambition. We may confidently recommend our friend not to despair, but calmly to consider what may be the possible cause.

It is known that mechanical taste and ability are bestowed as nature's gifts, very unequally. One will acquire in a few hours what another may take months to accomplish, it is therefore not to be wondered at if one student advances before another in the same time, even where equal attention is given. Our less-gifted friend need only apply himself faithfully to his work and all obstacles will be surmounted. Should this not be the cause for complaint, another and equally important point may be considered, namely, health. A student who does not attend to his health cannot expect to accomplish great things. The baneful practice of cramming, the distressing sleeplessness at night, the ever-existing anxiety as to the issue of coming examinations, and many other grievances, may never enter into the student's career if the health is carefully studied.

Manipulative Miscellany.

All instruments or articles wished to be described under this heading are requested to be sent *for inspection* to the publishers not later than the 8th and 23rd of each month, they can be returned in a few days. Where, from the size or otherwise, this is impracticable, a clear and minute description will be sufficient; the sole object being to give practitioners a description of everything new, on its own merits, and without any intention or wish to pit one against another. All makers, vendors, and inventors, are invited, with strict impartiality, to contribute towards this end.

DENTAL SPECULUM.

MR. RUTTERFORD has made an apparatus, designed by Dr. A. W. Edwards, to act as reflector or speculum, tongue depressor, lip distender, gag, rest, lint or rubber-dam holder, &c. It has also the double advantage of not looking formidable and being easily adjusted. Although it may not supersede other appliances already in use, it certainly will be a most serviceable adjunct to them. It is formed of a kind of fluted box of peculiar shape, to obtain strong but not concentrated light, one side having an elongated opening with a raised wire margin; the back part of this opening is placed behind the wisdom tooth, when the crowns of the molars and bicuspid alone appear in the box, which is covered with a beautifully-burnished coating of silver. The first engraving shows it *in situ* for the upper teeth of either side; A, the body of the box; B, the aperture; *a*, inside of reflector; *c*, *b*, wire coming over the bicuspid.

The second engraving shows the inside view, giving a much better idea of the shape of the box, but a very poor one, of the aperture for the teeth to come through. It is about the actual size.

The third engraving gives a much better notion of the manner in which the marginal wire is arranged as a lint holder. Large as it looks to go into the mouth, it scarcely ever causes nausea so far as we have been able to test it.

FIG. 1.

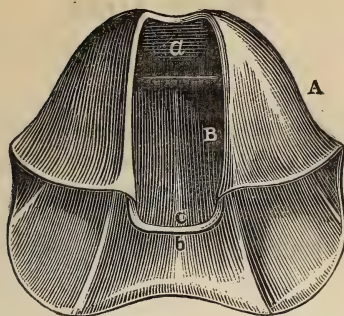


FIG. 2.

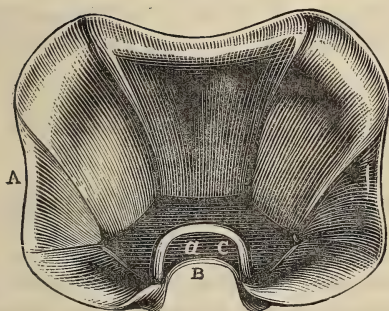
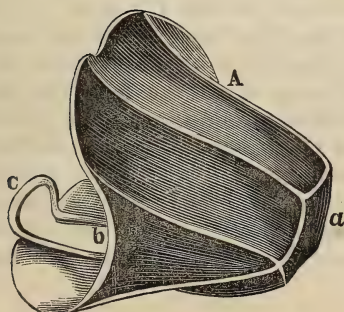


FIG. 3.



Dental News.

VACANCY.

DENTAL HOSPITAL OF LONDON MEDICAL SCHOOL.—Demonstrator of Contour and Cohesive Fillings. Applications, with Testimonials, before September 29th. The Demonstrator must devote not less than two hours three days a week for practical fillings. Salary £50 per annum.

THE ASHENHURST FUND.

	£	s.	d.		£	s.	d.
J. C. Tippet, Esq.	0	10	6	Per Messrs. C. Ash & Co.			
Mr. Watson (Assist.)	0	1	0	A Dentist's Pupil ...	0	5	0

WARNING TO YOUNG STUDENTS.

As the baneful habit of practical joking is not altogether unknown amongst students, we commend the following anecdote to their notice to show that the joke may not always remain on one side:—

On the first day of a recent Session, as the terms are called in Scotland, the students at the Edinburgh University read on the door of the Greek class-room—"Professor Blackie will meet his classes on the 4th inst." A wag took out his pencil, erased the "c," and made the notice read thus—"Professor Blackie will meet his lasses on the 4th." A group of young men hung about the door on the opening day to see how the professor would take the joke. Up he came, saw at once the change in his notice, stopped, took out his pencil, apparently made some further alteration, and passed into the room with a broad grin on his face. A roar of laughter followed him. As altered for the second time, the notice ran—"Professor Blackie will meet his asses on the 4th."

Correspondence.

[We do not hold ourselves responsible for the opinions expressed by our Correspondents.]

CAPE COLONY.—REGISTRATION CERTIFICATES.

To the Editor of the 'British Journal of Dental Science.'

SIR,—Some short time ago I sent you a copy of a petition regarding Dental Surgery that was presented to His Excellency, asking for protection from empirical practitioners. Any person possessing his registration certificate (granted under the Dentists Act, 1878) will, on application to the Colonial Secretary, be granted a license to practise as a Dental Surgeon in this colony. The biannual publication of all licensed Dentists on the list of medical practitioners and chemists has caused quite a commotion amongst those Dentists who neglected to register as colonial Dentists. They have applied for a license, but having no papers their application could not be granted. One *bond fide* Dentist residing in the Eastern province neglected to register, and in order to receive the colonial license was compelled to make a trip home to get the "Dental diploma," L.D.S., which I am pleased to say he obtained. His action should be imitated by every one who has time, money, and courage to try for it. We hope after a time to have a representative of our profession on the Medical Board, as our numbers are steadily increasing year by year. We have a few of the advertising class, but when they become known it is to be hoped they will cease from doing so. I do not think a simple address in the papers is derogatory to the profession, for one must keep his name before the public (unless he wishes to be forgotten) when in some out-of-the-way place.

Yours, &c., BERKS T. HUTCHINSON, L.D.S.I.

To the Editor of the 'British Journal of Dental Science.'

SIR,—It has lately come to my knowledge that Dr. Campbell, of America, has taken to himself the credit of the invention of the rugæ which he introduces in the teachings of his celluloid process. Allow me to state that long before Dr. Campbell visited this country I invented and taught a process for the manipulation of vulcanite and celluloid in which the rugæ is introduced, being transferred from a well-marked model, a specimen of which I exhibited at the Odontological Society in June. Many Dentists of position can corroborate this statement. Therefore, Dr. Campbell

can have no claim whatever to the credit of the invention.
I am, &c., W. J. CHENEY.

Accrington.

[In or about the year 1859 Mr. J. Smith Turner, the indefatigable Hon. Sec. of the British Dental Association, then in partnership with the late Mr. Bell, introduced the "Bell and Turner" Flask, one of the most ingenious parts of which was the "diaphragm"—a flat ring of brass just the required thickness of the vulcanite plate. The teeth were adjusted on the model, and the case flaked *without* any wax palate and *without* the "diaphragm." When packed the diaphragm was put on and the parts of the flask separated just its thickness, thus producing an *exact* counterpart of the natural rugæ. We believe this was the first, real, and only original invention for this purpose.—ED. 'B. J. D. S.']

MONTHLY REPORT OF CASES TREATED AT THE
DENTAL HOSPITAL OF LONDON,
FROM AUGUST 1ST TO AUGUST 31ST, 1882.

Extractions	Children under 14	561
	Adults	940
	Under Nitrous Oxide	481
Gold Stoppings		77
White Foil ditto		3
Plastic ditto		417
Irregularities of the Teeth treated mechanically		45
Miscellaneous Cases		286
Advice Cases		171
Total		2981

WILLIAM HERN,
House Surgeon.

MONTHLY REPORT OF CASES TREATED AT THE
NATIONAL DENTAL HOSPITAL,
FROM AUGUST 1ST TO AUGUST 31ST, 1882.

Number of Patients attended	1485
Extractions { Children under 14.....	436
Adults.....	648
Under Nitrous Oxide	74
Gold Stoppings	26
Sheets of Gold used, independent of Pellets.....	
Other Stoppings	209
Advice and Scaling	168
Irregularities of the Teeth	76
Miscellaneous.....	268
Total	1905

FRED. WM. BATE,
House Surgeon pro tem.

DENTAL STUDENTS' SUPPLEMENT.

SEPTEMBER 15, 1882.

I.—THE LICENSING CORPORATIONS.

COMPARATIVE SUMMARY OF REGULATIONS FOR THE LICENSE IN DENTAL SURGERY.

	Royal College of Surgeons, England.	Royal College of Surgeons of Edinburgh.	Royal College of Surgeons in Ireland.	Faculty of Physicians and Surgeons, Glasgow.
1. PRELIMINARY EXAMINATION	Compulsory on all who commenced their Professional Education after July 22nd, 1878	Compulsory on all who commenced their Professional Education after August 1st, 1878	Compulsory on all, except in the case of the modified Examination, <i>vide infra</i>	Compulsory on all who commenced their Professional Education after August 1st, 1878
2. AGE at which the Candidate may present himself	Twenty-one	Twenty-one	Twenty-one	Twenty-one
3. DURATION OF PROFESSIONAL EDUCATION	Four years	Four years	Four years	Four years
4. COURSES OF LECTURES, &c., to be attended at a recognised School:				
Anatomy	Two Courses, or one Course and twenty Lectures on Head and Neck	One Winter Course	One Course	Two Courses, or one Course and twenty Lectures on Head and Neck.
Physiology	One Course	One Course of fifty Lectures		One six month's Course.
Surgery	Ditto	One Winter Course	Ditto	Ditto.
Medicine	Ditto	Ditto	None	Ditto.
Chemistry	Ditto	Ditto	One Course	Ditto.

	Royal College of Surgeons, England.	Royal College of Surgeons of Edinburgh.	Royal College of Surgeons in Ireland.	Faculty of Physicians and Surgeons, Glasgow.
4. COURSES OF LECTURES, &c. (continued) — Materia Medica, ... Dissection and Demonstra- tions or Dissections and Anatomy of Head and Neck Practical Chemistry and Metallurgy Practice of Surgery and Clinical Lectures Dental Anatomy and Phy- siology Dental Surgery Dental Mechanics Practical Instruction in Mechanical Dentistry ..	One Course Nine months One Course of each Two Winter Sessions Two Courses Ditto Ditto Three years under a competent Practitioner Two years	One three months' Course Nine months Nine months One Course of 20 Lectures One three months' Course One six months' Course, or two three months' Courses One Course Ditto Ditto Three years under a Re- gistered Dental Practi- tioner Two years	One Course Two Courses One Course Two Winter Sessions None Two Courses Three years under a Re- gistered Dental Licen- tiate Nine months £10 10s. Six months	One three months' Course. Nine months. One three months' Course. One year. Twenty-four Lectures. Twenty Lectures. Twelve Lectures or De- monstrations. Three years under a Re- gistered Practitioner. Two years. £10 10s. Three months.
5. FEE.....	£10 10s. over and above any stamp duty	£10 10s.	£10 10s.	£10 10s.
6. LEAST period during which unsuccessful Candidates are referred to their stu- dies	Six months	Three months	Six months	Three months.
7. PARTICULARS OF EXAMINA- TION	(A) Written : On General Anatomy and Phy- siology	Written and Oral : First Part.—Anatomy, Physiology, and Dental Surgery	Written and Oral : On all the subjects of the course	Written, Oral, and Prac- tical :

iology	Physiology, Chemistry, and Metallurgy	Curriculum	First Part.—Anatomy, Physiology, Chemistry, and Metallurgy. Second Part.—Surgery, Medicine, Materia Medica, and special Dental subjects. Practical Examination at a Dental Hospital. Candidates are to bring Excavators, Files, and Plugging Instruments.
General Pathology and Surgery (Both with especial reference to Dental practice) (B) <i>Oral</i> : On all the subjects in the Curriculum Preparations, Casts, and Drawings Fillings Cases for Diagnosis, Instruments, &c.	Second Part.—Surgery, Medicine, Materia Medica, and special Dental subjects	Preparations, Microscopes, and other appliances	Second Part.—Surgery, Medicine, Materia Medica, and special Dental subjects. Practical Examination at a Dental Hospital. Candidates are to bring Excavators, Files, and Plugging Instruments.
8. DATE OF EXAMINATION ...	February, June, and October	October 30th, 1882, and following days	1882, October 11—13. 1883, January 23—25. " April 2—4 " July 16—18
9. MODIFIED EXAMINATIONS, OR EXAMINATIONS <i>sine curriculo</i> :	(a.) Conditions of eligibility Candidates must have been in Practice or have commenced Professional Education prior to September, 1859	After the 1st day of August, 1881 (?) no candidate shall be admitted to examination who has not pursued the above curriculum	Candidates must be Registered Dental Practitioners in Practice before August, 1878, or apprenticed before August, 1875. Certificate of moral and professional character signed by two Registered Medical Practitioners
(b.) Certificates, &c., required	One of moral character signed by two Members of the College or two Licentiates of the Licensing Bodies in the country where the education was received		

9. MODIFIED EXAMINATIONS (continued)— (b.) Certificates, &c., re- quired (continued)—	Royal College of Surgeons, England.	Royal College of Surgeons of Edinburgh.	Royal College of Surgeons in Ireland.	Faculty of Physicians and Surgeons, Glasgow.
	Name Age Professional address Date of commencing Practice	Name in full Age Address Date of commencing Den- tal Practice or appren- ticeship, and whether if in practice, in conjunc- tion with any other and what business		Name. Age. Address. Date of commencing Prac- tice.
	Whether a Member, Licentiate, or Graduate of any British College of Physicians, College of Surgeons, or University, with date of License, &c. Of what learned societies a Mem- ber	Whether practising Den- tistry in conjunction with any other business, and, if so, what		Professional status.
(c.) Manner of Examination For further information apply to Secretary	Whether he has employed Ad- vertisements or Public Notices since July 22nd, 1876 Particulars of Professional Edu- cation Same as ordinary Examination	Particulars of Professional Education Same as ordinary Exami- nation		Particulars of Professional Education. Same as ordinary Exami- nation.
	EDWARD TRIMMER, Esq., Royal College of Surgeons, Lincoln's Inn Fields, London, W.C.	JOSEPH BELL, Esq., 20, Melville Street, Edinburgh.	JOHN BRENNEN, Esq., Royal College of Surgeons, Dublin.	ALEX. DUNCAN, Esq., Faculty of Physicians and Surgeons, Glasgow.

II.—PRELIMINARY EDUCATION.

The 'Dental Record' has given the subject of preliminary education so lucidly, yet concisely, that we quote it *in extenso*.

REGULATIONS OF GENERAL MEDICAL COUNCIL.

No person shall be allowed to be registered as a Medical or Dental Student unless he shall have previously passed a Preliminary Examination in the subjects of General Education as specified in the following list:—*

1. English Language, including Grammar and Composition.†
2. English History.
3. Modern Geography.
4. Latin, including Translation from the original, and Grammar.
5. Elements of Mathematics, comprising (a) Arithmetic, including Vulgar and Decimal Fractions; (b) Algebra, including Simple Equations; (c) Geometry, including the first two Books of Euclid, or the subjects thereof.
6. Elementary Mechanics of Solids and Fluids, comprising the Elements of Statics, Dynamics, and Hydrostatics.‡
7. One of the following Optional subjects:—
(a) Greek; (b) French; (c) German; (d) Italian; (e) any other Modern Language; (f) Logic; (g) Botany; (h) Elementary Chemistry.

List of Examining Bodies whose Examinations fulfil the conditions of the Medical Council as regards preliminary education:—

I. UNIVERSITIES IN THE UNITED KINGDOM.

UNIVERSITY OF OXFORD:—

1. Junior Local Examinations; Certificate to include Latin and Mathematics, and also one of the following optional subjects:—Greek, French, German, Natural Philosophy, including Mechanics, Hydrostatics, and Pneumatics.
2. Senior Local Examinations; Certificate to include Latin and Mathematics.
3. Responsions.
4. Moderations.
5. Examination for a Degree in Arts.

UNIVERSITY OF CAMBRIDGE:—

6. Junior Local Examinations; Certificate to include Latin and Mathematics, and also one of the following optional subjects:—Greek, French, German, Natural Philosophy, including the Elements of Statics and Hydrostatics.

* The Examinations in General Education conducted by Universities will be accepted as heretofore, but if in any of these Examinations the subjects of Elementary Mechanics of Solids and Fluids are not included, the Candidate must pass in one or other of the remaining optional subjects instead, and a knowledge of Elementary Mechanics will be required at a subsequent Examination.

† "The General Medical Council will not consider any Examination in English Language sufficient that does not fully test the ability of the Candidate:—(1) To write sentences in correct English on a given theme, attention being paid to spelling and punctuation as well as to composition;—(2) to write correctly from dictation;—(3) to explain the grammatical construction of sentences;—(4) to point out the grammatical errors in sentences ungrammatically composed, and to explain their nature; and (5) to give the derivation and definition of English words in common use."

‡ "This subject may be passed either as Preliminary, or before, or at the first Professional Examination."

7. Senior Local Examinations; Certificate to include Latin and Mathematics.
8. Higher Local Examinations.
9. Previous Examination.
10. Examination for a Degree in Arts.

UNIVERSITY OF DURHAM:—

11. Junior Local Examinations; Certificate to include Latin and Mathematics, and also one of the following optional subjects:—
Greek, French, German, Natural Philosophy, including Mechanics, Hydrostatics, and Pneumatics.
12. Senior Local Examinations; Certificate to include Latin and Mathematics.
13. Registration Examination for Medical Students.
14. Examination for Students at the end of their first year.
15. Examination for a Degree in Arts.

UNIVERSITY OF LONDON:—

16. Matriculation Examination.
17. Preliminary Scientific (M.B.) Examination.
18. Examination for a Degree in Arts or Science.

UNIVERSITY OF EDINBURGH:—

19. Local Examinations (Junior Certificate); Certificate to include English Literature, Arithmetic, Algebra, Geometry, Latin, and also one of the following optional subjects:—
Greek, French, German, Natural Philosophy.
20. Local Examinations (Senior Certificate); Certificate to include English Literature, Arithmetic, Algebra, Geometry, Latin, and also one of the following optional subjects:—
Greek, French, German, Natural Philosophy.
21. Preliminary Examination for Graduation in Science or Medicine and Surgery.
22. Examination for a Degree in Arts.

UNIVERSITY OF ABERDEEN:—

23. Local Examinations (Honours Certificate); Certificate to include English Literature, Arithmetic, Algebra, Geometry, Latin, and also one of the following optional subjects:—
Greek, French, German, Natural Philosophy.
24. Preliminary Examination for Graduation in Medicine or Surgery.
25. Examination for a Degree in Arts.

UNIVERSITY OF GLASGOW:—

26. Local Examinations (Senior Certificate); Certificate to include English Literature, Arithmetic, Algebra, Geometry, Latin, and also one of the following optional subjects:—
Greek, French, German, Natural Philosophy.
27. Preliminary Examination for Graduation in Medicine or Surgery.
28. Examination for a Degree in Arts.

UNIVERSITY OF ST. ANDREW'S:—

29. Local Examinations (Honours Certificate); Certificate to include English Literature, Arithmetic, Algebra, Geometry, Latin, and also one of the following optional subjects:—
Greek, French, German, Natural Philosophy.
30. Preliminary Examination for Graduation in Medicine or Surgery.
31. Examination for a Degree in Arts.

UNIVERSITY OF DUBLIN:—

32. Public Entrance Examination.
33. Examination for a Degree in Arts.

QUEEN'S UNIVERSITY IN IRELAND:—

34. Local Examinations for Men and Women; Certificate to include all the subjects required by the General Medical Council.
35. Entrance or Matriculation Examination.
36. Previous Examination for B.A. Degree.
37. Examination for a Degree in Arts.

OXFORD AND CAMBRIDGE SCHOOLS' EXAMINATION BOARD:—

38. *Certificate, to include the following subjects:—
 - (a) Arithmetic, including Vulgar and Decimal Fractions.
 - (b) Algebra including Simple Equations.
 - (c) Geometry, including the first two Books of Euclid.
 - (d) Latin, including Translation and Grammar.
 - (e) Also one of these optional subjects:—
Greek, French, German, Mechanical Division of Natural Philosophy.

II.—OTHER BODIES NAMED IN SCHEDULE (A) TO THE
“MEDICAL ACT.”

APOTHECARIES' SOCIETY OF LONDON:—

39. Examination in Arts.

ROYAL COLLEGES OF PHYSICIANS AND SURGEONS OF EDINBURGH:—

40. Preliminary (combined) Examination in General Education.

FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW:—

41. Preliminary Examination in General Education.

ROYAL COLLEGE OF SURGEONS IN IRELAND.—

42. Preliminary Examination; Certificate to include Mathematics.

APOTHECARIES' HALL OF IRELAND:—

43. Preliminary Examination in General Education.

III.—EXAMINING BODIES IN THE UNITED KINGDOM NOT INCLUDED IN SCHEDULE (A) TO THE “MEDICAL ACT” (1858).

COLLEGE OF PRECEPTORS:—

44. Examination for a First Class Certificate, or Second Class Certificate of First or Second Division, Algebra, Geometry, Latin, and a Modern Language, having been taken.

EXAMINERS FOR COMMISSIONS AND APPOINTMENTS IN HER MAJESTY'S SERVICE, MILITARY, NAVAL, AND CIVIL:—

45. Certificate to include all the subjects required.

IV.—CERTAIN EXAMINATIONS OF INDIAN, COLONIAL, AND FOREIGN UNIVERSITIES AND COLLEGES.

* The *English* is provided for by the following *Resolution*, passed by the Executive Committee on October 27, 1876 (*Minutes*, Vol. XIII, p. 357:—

“That as every Candidate for the Certificate of the Oxford and Cambridge Schools' Examination Board is required to answer questions in such a manner as to satisfy the Examiners that he has an adequate knowledge of English Grammar and Orthography, this shall be held as conforming to the requirements of the Medical Council in reference to English Language.”

III.—EDUCATIONAL BODIES.

LONDON.

DENTAL HOSPITAL OF LONDON AND LONDON SCHOOL OF DENTAL SURGERY, LEICESTER SQUARE.

HOSPITAL STAFF.

Consulting Physician.—SIR THOMAS WATSON, Bart., M.D.

Consulting Surgeon.—CHRISTOPHER HEATH, F.R.C.S.

Consulting Dental Surgeons.

SAMUEL CARTWRIGHT, F.R.C.S.

JOHN TOMES, F.R.S.

Dental Surgeons.

9 a.m.—Monday.....	DAVID HEPBURN, L.D.S.
„ Tuesday	A. GEORGE MEDWIN, M.D., M.R.C.S., L.D.S., &c.
„ Wednesday	GEORGE GREGSON, M.R.C.S., L.D.S.
„ Thursday	S. J. HUTCHINSON, M.R.C.S., L.D.S., &c.
„ Friday	HENRY MOON, M.R.C.S., L.D.S.
„ Saturday	ALFRED HILL, L.D.S.

Assistant Dental Surgeons.

„ Monday.....	F. CANTON, L.R.C.P., M.R.C.S., L.D.S.
„ Tuesday	ARTHUR S. UNDERWOOD, M.R.C.S., L.D.S.
„ Wednesday	C. E. TRUMAN, M.A., M.R.C.S., L.D.S.
„ Thursday	R. H. WOODHOUSE, M.R.C.S., L.D.S.
„ Friday	STORER BENNETT, L.R.C.P., M.R.C.S., L.D.S.
„ Saturday	GEO. PARKINSON, M.R.C.S., L.D.S.

Administrators of Chloroform.

9.30 a.m.—Tuesday and Wednesday.....	J. T. CLOVER, F.R.C.S.
„ Friday and Saturday	F. WOODHOUSE BRAINE, F.R.C.S.
„ Monday	G. H. BAILEY, M.R.C.S.
„ Thursday	T. BIRD, M.A., M.R.C.S.

Demonstrators.

CLAUDE ROGERS, M.R.C.S., L.D.S., D.D.S. U.S.

JOHN ACKERY, M.R.C.S., L.D.S.

Medical Tutor.—A. MORTON SMALE, M.R.C.S., L.D.S., L.S.A.

House Surgeon.—W. HERN, M.R.C.S., L.D.S.

Assistant House Surgeon.—W. F. CORNELIUS.

Demonstrations.

The Medical Officers will make every effort to give Demonstrations to the junior pupils, on cases selected from time to time, every morning during the Lecture Session; and at the end of the Course those gentlemen who have attended the Demonstrations to the satisfaction of the Medical Officers will be permitted to perform operations at the Hospital under the supervision of the Medical Officers and the House Surgeon.

Dresserships for Cases of Extraction.

These appointments are held for two months, and consist of six Senior Dresserships for extractions under anæsthetics, and eighteen Junior Dresserships for ordinary extractions.

The Senior Dressers will be selected from those pupils only who have entered fully both to the Practice and Lectures of this Hospital, and also to the Course required by the College of Surgeons for the Licence in Dental Surgery at one of the General Hospitals.

MEDICAL SCHOOL.

The WINTER SESSION will commence on MONDAY, OCTOBER 2nd.

The SUMMER SESSION will commence in MAY, 1883.

LECTURES.

Dental Surgery and Pathology, by ALFRED COLEMAN, F.R.C.S. (Exam.),
L.R.C.P., L.D.S., &c.

THE FIRST DENTITION:—Conditions normal and abnormal. Treatment to be pursued in latter. Period of eruption of the temporary Teeth. Diseases and conditions peculiar to the temporary Teeth. Treatment of same. Absorption of temporary Teeth. Conditions interfering with same and consequences thereof.

THE SECOND DENTITION:—Conditions normal and abnormal. Order and period of eruption of irregularities in the permanent Teeth, in size, form, number, and position. Treatment of irregularities in position. Dislocation, fracture, and other injuries to the Teeth.

DISEASES OF THE TEETH:—Dental Caries; its nature and various forms. Theories of Dental Caries. Treatment of Dental Caries by excision, by stopping or filling. Pathological conditions of the Dental Pulp. Treatment of same when exposed by injury or disease. Preservation of the Dental Pulp. Destruction of same. Dental Necrosis, Exostosis, &c.

DISEASES OF THE PERIODONTAL MEMBRANE:—Congestion. Inflammation. Suppuration. Alveolar Abscess. Pathology. Treatment, &c., of Extraction of Teeth. Difficulties and complications in Alveolar Hæmorrhage. Anæsthetics in Dental operations.

NECROSIS OF ALVEOLI:—Dental Fistulæ. Closure of Jaws by Cicatrices. Diseases of Gums. Congestion. Inflammation. Ulceration. Stomatitis: follicular, ulcerative, and gangrenous. Tumours of parts adjacent to the Teeth. Dental and Dentigerous Cysts. Neuralgia, &c.

These Lectures will be delivered on the Mornings of Tuesday and Thursday, at 8 o'clock, during the months of May and June. Recent Specimens, Preparations, Models, Drawings, &c., will be used to illustrate the Lectures.

Dental Anatomy and Physiology (Human and Comparative), by C. S. TOMES, F.R.S., M.A., M.R.C.S., L.D.S.

GENERAL SCOPE OF ODONTOLOGY:—General Characters of Teeth, as to composition, form, position, &c.

THE DENTAL TISSUES:—Enamel. Distribution of, peculiar modifications of, &c. Dentine, structure, &c., relation of to Bone, Vaso-dentine and Osteo-dentine. Cementum. Structure, distribution, &c. Dental Pulp, structure, modification in advanced age, &c.

THE DEVELOPMENT OF TEETH:—General Account of, as seen in Fish, Reptiles, and Mammals. Special modifications in particular groups. Relation of modern views to those held by Goodsir, &c.

THE DEVELOPMENT OF THE JAWS:—Their bearing upon Irregularities of the Teeth.

THE ATTACHMENT OF THE TEETH:—By Membrane, by Anchylosis, by Implantation in Sockets. The relations existing between these three methods.

THE TEETH OF MAN.

ANATOMY OF CHIEF ASSOCIATED PARTS.

An outline (so far as time may allow) of the Dentition of other Vertebrates.

Causes operating to modify an animal's dentition:—(1) Inheritance; (2) Armament for sexual warfare; (3) Provision for capture and comminution of food.

Fish:—Examples of typical dentitions.

Reptiles:— Ditto.

Mammals:— Ditto.

Examples of extreme modifications for particular purposes. Character of Marsupial Dentition; of Carnivorous, Insectivorous, Rodent, and Herbivorous Dentitions.

These Lectures will be delivered on the Mornings of Wednesday and Friday, at 8 o'clock, during the months of May and June. This course will be illustrated by Preparations, Diagrams, and Microscopic Examinations.

MECHANICAL DENTISTRY, by J. WALKER, M.D., M.R.C.S., L.D.S.

Comprising the Preparation of the Mouth for Artificial Teeth. Impression-taking in Wax Composition and Plaster of Paris. Mould-making in Plaster and Metal. Bites or Articulations. The Metals used in Dentistry. Gold-melting, Refining, and Alloying. Plate-making. Artificial Teeth, their qualities and arrangement. How to work Tube and Pin Teeth. Vulcanite, its nature and preparation. Making Vulcanite Cases. Making Pivots. Mounting Spiral Springs. Regulation Plates. Dr. N. Kingsley's Method of making Soft Rubber Obturators.

This Course is illustrated by diagrams and practical demonstrations.

These Lectures will be delivered on the Evenings of Wednesday, at 7 o'clock, commencing October 4.

METALLURGY IN ITS APPLICATION TO DENTAL PURPOSES, by PROFESSOR HUNTINGDON (King's Coll.), F.I.C., F.C.S., &c.

The Lectures delivered in this Course, while embracing, as far as possible, the subject generally, will be devoted more particularly to those metals useful in Dental practice.

The general properties of the Metallic Bodies will first be examined, and also their Clinical relations to the non-Metallic. Some consideration will then be given to heating appliances, and to the nature and uses of Gaseous and Solid Fuels. After these the metals will be separately treated of, commencing with the noble, and ending with the base metals.

Throughout the Course, such Chemical and Mechanical points as may bear upon the Student's pursuits will be treated of, and methods of analysis detailed.

These Lectures will be delivered on the Mornings of Tuesday, at 12 o'clock, commencing October 3.

MEDICAL TUTOR.

The Medical Tutor attends on four days in the week, from 5 to 7 p.m. for two months previous to two of the Annual Examinations. His classes are open to all Students, and are intended to assist those who are preparing for their examinations at the College of Surgeons, generally speaking, to guide and direct the studies of the pupils, and prepare them in the subjects for the Examinations.

FEES.

GENERAL FEE FOR THE SPECIAL LECTURES REQUIRED BY THE CURRICULUM, viz. two Courses on Dental Anatomy, two Courses on Dental Surgery, two Courses on Mechanical Dentistry, and one Course of Metallurgy, £15 15s.

Fee for the Two Years' Practice of the Hospital required by the Curriculum, £15 15s.

Total Fee for the Special Lectures and Hospital Practice required by the Curriculum, £31 10s.

Students who perform Operations for Filling Teeth must provide their own Instruments for the same.

Additional Fees for a General Hospital for the two years, to fulfil the requirements of the curriculum, vary from £40 to £50.

PRIZES.

The Prize-day will in future be held in July.

1. Prizes are awarded by the Lecturers for the best examinations in the subjects of their respective courses, at the end of the Summer and Winter Sessions.

2. Arrangements have been made for a prize in Operative Dentistry, in the competition for which each candidate will be entrusted with the care of a mouth, which he shall, if not impracticable, set thoroughly in order.

3. A prize of the value of five guineas will be given by Mr. George Buchanan, of Glasgow, for the best essay on the following subject:

DENTAL CARIES.—This competition is open to second years' men only.

4. A scholarship of the value of £20 has been founded by Mr. Edwin Saunders, and will be awarded to the Student who has obtained the largest number of First Class Prizes during the Winter and Summer Sessions preceding the July in which the award takes place.

Note.—The Medical Committee have resolved, “that the holder of the Saunders Scholarship be admitted without additional fee to an extra year of hospital practice.”

Rules and Regulations to be observed by Students of the Hospital.

[The Dean particularly calls attention to Rules 2, 6, 8, and 11.]

1. Students entering the practice of this Hospital shall (unless exempted for special reasons) do so upon the understanding that it is their intention to obtain the Dental Diploma of the Royal College of Surgeons of England. Before commencing their course of Studies they must sign their names as willing to conform to this rule and the following regulations.

2. Students must attend the Hospital daily (except Sunday) at 9 o'clock a.m. An Attendance-book is provided, in which the Pupils must sign their names each day.

3. No Student shall undertake any operation until he has attended a Course of Demonstrations to the satisfaction of the Medical Officers. When permitted to undertake operations for filling teeth, he must provide the instruments requisite for the same. For all cases of gold filling, permission must be obtained of a Medical Officer. A certificate of having performed 150 fillings to the satisfaction of the Medical Officers or the House Surgeon in each of his two years of attendance will be required from a Pupil before his Schedule can be signed.

4. Every Student entering the Hospital will be required to treat at least two regulation cases mechanically in each of the two years of his attendance at the Hospital.

5. No Student shall, under any circumstances, receive fee or remuneration from any patient attending, or to whom he may become known whilst attending the Hospital, and no mechanical work in the form of artificial teeth shall be supplied to a patient by a Student of the Hospital.

6. Students must be punctual in their appointments with Patients; when otherwise, cases previously under their care will be entrusted to other Students by the Medical Officers.

7. No Student shall make use of the same Operating Chair for Patients consecutively, whilst other Students are unoccupied for the want of the same.

8. All instruments and appliances the property of the Hospital shall, after having been used by a Student, be returned cleansed to their proper places.

9. Students must consider themselves strictly under the control of the Medical Officers of the Hospital. All unnecessary conversation must be avoided, and quietude and gentlemanly bearing before the Patients observed.

10. Any exemption from fully carrying out Rules 1, 2, and 3, can only be obtained from the Medical Committee upon grounds that may appear to them good and proper for granting such exemption.

11. Leave of absence must be obtained from the Dean, to whom in case of sickness, or other unavoidable cause of non-attendance, *written* notice is to be immediately sent.

N.B.—Students will be required to attend the Lectures and Practice during the Two Years, CONSECUTIVELY, except with the special written permission of the Dean. By a Resolution of the Council of the College of Surgeons, all Students entering on and after October 1st, 1877, will be required to complete the FULL TWO YEARS OF HOSPITAL PRACTICE.

In future, at the close of the Winter and Summer Session, the Dean will prepare a report of the attendance, general conduct, and progress of each Student, which will be forwarded to his Parent or Guardian. A copy of these reports will be kept for future reference.

The Dean requests that all Communications relating to the Medical School may be addressed to him at the Hospital, where he will attend in the after-

noons, from September 26th to October 1st, inclusive, from 5 till 5.30 o'clock, or on Wednesday mornings from 10.30 till 12.

T. FRANCIS KEN UNDERWOOD, M.R.C.S., L.D.S., *Dean*

NATIONAL DENTAL HOSPITAL AND COLLEGE, GREAT PORTLAND STREET, W.

HOSPITAL STAFF.

Consulting Physicians.

B. W. RICHARDSON, M.A., M.D., F.R.S.

W. H. BROADBENT, M.D., F.R.C.P.

Consulting Surgeons.

PROFESSOR ERICHSEN, F.R.S. | SPENCER WELLS, F.R.C.S.

CHRISTOPHER HEATH, F.R.C.S.

Consulting Dental Surgeon.—J. MERRYWEATHER, M.R.C.S.

Dental Surgeons.

Monday.....F. HENRI WEISS, L.D.S. Eng.

Tuesday.....GURNELL HAMMOND, L.D.S. Eng.

Wednesday G. A. WILLIAMS, L.D.S. Eng.

Thursday A. F. CANTON, L.D.S. Eng.

Friday THOMAS GADDES, L.D.S. Eng. & Edin.

Saturday HARRY ROSE, L.D.S. Eng.

Assistant Dental Surgeons.

Monday.....WILLOUGHBY WEISS, L.D.S. Eng.

Tuesday.....R. G. BRADSHAW, L.D.S. Eng.

Wednesday

Thursday ALFRED SMITH, L.D.S. Eng.

Friday DENNIS CURNOCK, L.D.S. Eng.

Saturday W. R. HUMBY, L.D.S. Eng.

House Surgeon.—FRED. BATE, *pro. tem.*

LECTURERS.

Dental Anatomy and Physiology THOMAS GADDES, L.D.S. Eng. and Edin.

Dental Surgery and Pathology WILLOUGHBY WEISS, L.D.S. Eng.

Dental Mechanics HARRY ROSE, L.D.S. Eng.

Dental Metallurgy ALFRED TRIBE, F.C.S., Fell. Inst. Chem.

Operative Dental Surgery

Elements of Histology.....THOMAS GADDES, L.D.S. Eng. and Edin.

Demonstrator of Dental Mechanics ...W. R. HUMBY L.D.S. Eng.

Deformities of the Mouth OAKLEY COLES, L.D.S. Eng.

Arts and Literature.....Rev. H. R. BELCHER, M.A.

The Hospital is open for the reception of patients every week-day from 9 o'clock till 11 o'clock a.m. The House Surgeon attends daily from 9 o'clock a.m. till 2 o'clock p.m.

DRESSERSHIPS IN THE EXTRACTION ROOM.—These appointments are held for three months by six senior and six junior Students of the Hospital. The respective dressers for each day are required to be in attendance from 9 o'clock till the conclusion of the practice; and they will be under the direction of the Dental Surgeons for the day and of the House Surgeon.

CLINICAL LECTURES AND DEMONSTRATIONS.—Each Medical Officer will give Clinical Lectures, when opportune, during the ensuing year. Clinical Lectures will also be given from time to time on cases of special interest; and also Demonstrations upon the Preparing and Filling of Cavities, and other operations upon the teeth and contiguous parts.

ATTENDANCE AND EXAMINATION OF STUDENTS.—A Register is kept of the attendance of Students at the Hospital Practice and Lectures. An attendance of full Two Years at Hospital Practice is required by the College of

Surgeons of England; and no schedule will be signed for any Lectures of which less than two thirds have been attended. Class Examinations are held frequently during the several courses to test the progress and attention of the Pupils; and at the end of each Course of Lectures a written examination is held. An insufficient attendance at Lectures disqualifies the Student for receiving any Prize of that year. Tutorial Classes are held to prepare for the Final Examinations Students who have, at this school, complied with the Special Dental portion of the Curriculum.

LECTURES.

Winter Session, commencing on Monday, October 2nd, 1882—83.

DENTAL ANATOMY AND PHYSIOLOGY, by THOMAS GADDES, L.D.S. Eng. and Edin. On Tuesdays and Thursdays at 7 p.m. during October, November, and December.

The following is the order in which the subjects will be treated:—The Synthetic Study of Odontology. The differentiation of tissues for Dental purposes. The factors in the process of evolution. The specialised tissues produced in successive generations, as Bone; Cementum; Osteo-dentine; Vaso-dentine; Plici-dentine; Hard, or True dentine; and Horn.—The structure of the “typical” hard tooth-tissues: their structural modifications and morphological relations.—The structure of the pulp, periosteum, and gum.—General distribution and form of teeth, with peculiar modifications as found in Fish, Reptiles, and various orders of Mammals.—Relation of teeth to jaws in man compared with other primates.—The development of teeth as seen in Fish, Reptiles, and Mammals. Origin, structure, metamorphosis, and homologous relations of the several formative organs or pulps.—The attachment of teeth by Anchylosis, Membrane, Hinge and Gomphosis.—The succession of teeth.—The development of the jaws of man—of the antrum, alveoli, &c. The course will consist of twenty-four Lectures, which will be illustrated by Diagrams, Preparations, and Microscopic Specimens.

OPERATIVE DENTAL SURGERY AND THERAPEUTICS. On Wednesdays, at 7 o'clock p.m., during November and December. (Free to Students of the Hospital or College.)

These Lectures will include the consideration of—Dental Caries leading to exposure of the pulp.—Diseases of Pulp and Peridental Membrane (including Acute and Chronic Alveolar Abscess), and Treatment.—The preparation of cavities, previous to filling.—Filling Materials; including the different forms of gold, methods of preparing and using the same; also the various instruments required for operative work.—The last Lecture will be devoted specially to the subject of Replantation and Transplantation of Teeth. These Lectures will be illustrated by diagrams, specimens, preparations, and operations in the mouth.

DENTAL METALLURGY, by ALFRED TRIBE, F.C.S. On Tuesdays at 9 a.m. during January, February, and March.

These Lectures will be devoted particularly to the consideration of those metals, amalgams, and alloys, which are used in Dental practice. The subjects of the Course will be treated in somewhat the following order:—Historical summary.—The general character of the metallic elements and their relations to the non-metals.—Distribution of metals in nature.—The general principles of metallurgic processes.—Fuel.—Furnaces.—The noble metals.—The base metals.—Alloys and amalgams.—Principles of electro-metallurgy.—Discrimination of metals, &c.

DENTAL MECHANICS, by HARRY ROSE, L.D.S. Eng. On Mondays at 7 p.m., during January, February, and March.

The subjects of this course will be treated in the following order:—Preparation of the Mouth for the reception of Artificial Teeth.—The Dental Laboratory, with a description of the agents and materials employed therein. The Materials used for Impressions and the methods of their Application.—Casting in Plaster and Metal.—The Application and Description of Precious and other Metals used in Mechanical Dentistry.—On the various forms of Porcelain, with a description of the processes necessary for the production

of Mineral Teeth.—Plastic Bases, viz. Vulcanite, Celluloid, &c.—Mechanical Treatment of Dental Irregularities.

DEMONSTRATIONS ON DENTAL MECHANICS, by W. ROBINSON HUMBY, L.D.S. Eng. On Wednesdays at 7 p.m., during January, February, and March. (Free to Students of the College.)

The subjects demonstrated in this course will be those practical points which are treated in a more theoretical manner by the Lecturer on Dental Mechanics. The Lecturer and the Demonstrator thereby work conjointly and harmoniously.

DEFORMITIES OF THE MOUTH AND THEIR TREATMENT, by OAKLEY COLES, L.D.S. Eng. On Fridays at 8 p.m., during February and March. (Free to Students of the College.)

In these Lectures the following subjects will be considered :

CONGENITAL DEFORMITIES.—Origin of Cleft Palate; theory of its Transmission from Parent to Offspring. Anatomy and Physiology of Cleft Palate. Troubles arising from Cleft Palate. Their Surgical and Mechanical Treatment.

ACQUIRED DEFORMITIES.—Resulting from Syphilis. Mechanical Injury. Gunshot Wounds, &c. Their Surgical and Mechanical Treatment. The Course will be illustrated by diagrams, models, and preparations. The construction of mechanical appliances will receive special consideration.

Summer Session, 1883.

DENTAL SURGERY AND PATHOLOGY. On Mondays and Thursdays at 6 p.m. during May, June, and July.

The subjects of this Course will be considered in the following order:—*Inflammation*: its symptoms, initial changes, causes, terminations, principles of treatment.—*Special Forms of Inflammation*: affecting the mouth and gums; catarrhal, herpetic, mercurial, croupous, phlegmonous, suppurative, acute œdematous.—*Inflammation of Special Tissues*: Pulp, periosteum mucous membrane of antrum.—*Atrophies*: Pulp, periosteum, alveolus, gums, dentine, cementum. Abrasions. Erosion. The atrophy of pregnancy.—*Caries and Necrosis* of teeth and jaws. Symptoms, Causes, and Treatment of.—*Hypertrophies*: Pulp—polypus, sensitive sprouting. Gum—Transparent hypertrophy of, congenital hypertrophy of. Periosteum—Polypus of. Jaws and alveolus. Tooth structures—exostosis, inostosis. Odontomes.—**NEW FORMATIONS**: Tumours, Odontomes, varieties and classification of.—**ACCIDENTS AND DISEASES OF JAWS AND ADJACENT STRUCTURES**: Foreign bodies in antrum, abscess of antrum, &c. Dislocation, fracture and closure of jaws. Surgery of lips, jaws and palate. Syphilitic affections in their influence upon the teeth and surrounding tissues. Neuralgia. Anæsthetics.—*Irregularities of Teeth* as regards form, period of eruption, and position. The Lectures will be illustrated by diagrams, models, and microscopic preparations.

ELEMENTS OF HISTOLOGY, by THOMAS GADDES, L.D.S. Eng. and Edin. On Wednesdays and Fridays at 7 p.m., during May and June. (Free to Students of the College.)

The object of this Course is to give an account of the minute structure and development of the simple tissues of the body, and to prepare the student for the Course on Dental Anatomy and Physiology. The subjects comprised in the Course are fully illustrated by diagrams, drawings, and microscopic specimens, and are treated in the following order:—*Introduction*: Life and its characteristics.—*Death*: Local, physiological, and general or systemic death.—*Cells*: Structure, cell-wall, function, multiplication.—*Blood*: Fluid, cells, granules.—*Epithelium*: Squamous, columnar, spheroidal, ciliated.—*Connective tissue*: Areolar, white-fibrous, yellow-elastic.—*Cartilage*: Temporary, permanent.—*Bone*: Spongy, compact; formation and absorption of Haversian systems.—*Muscle*: Striped and unstriped.—*Blood-vessels*: Arteries, capillaries, veins.—*Mucous membrane*.—*Skin and its appendages*.—*Glands*: Salivary, gastric, mucous.—*Secretion*: By glands, by membrane.—*Absorption*: By glands, by osmosis. ¶

ARTS AND LITERATURE CLASS, conducted by the Rev. H. R. BELCHER, LL.D., M.A.

The arrangements for this Class will vary according to the requirements of the Students entering.

FEES.

GENERAL FEE FOR SPECIAL LECTURES REQUIRED BY THE CURRICULUM OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.—£12 12s.

<i>Fees to Single Courses.</i>	<i>One Course.</i>	<i>Two Courses.</i>
Dental Anatomy and Physiology ...	£2 12 6	£4 4 0
Dental Surgery and Pathology ...	2 12 6	4 4 0
Dental Mechanics ...	2 12 6	4 4 0
Dental Metallurgy ...	3 3 0	5 5 0
*Operative Dental Surgery...	2 2 0	
*Elements of Histology ...	1 1 0	
*Demonstrations on Dental Mechanics ...	1 1 0	
*Deformities of the Mouth...	2 2 0	

Arts and Literature Class (three months), £3 3s. Hospital Practice, to Registered Practitioners (six months), £7 7s. Ditto (twelve months), £9 9s.

Fee for the two years' Hospital Practice required by the Curriculum, £12 12s.

Total Fee for the Special Lectures and Hospital Practice required by the Curriculum, £25 4s.

PRIZES.

Five Prizes, in Medals, are open for competition among the Students of the College at the end of each Course of Lectures on the following subjects, viz. Dental Anatomy, Dental Surgery, Dental Mechanics, Metallurgy, and Operative Dental Surgery.

Certificates of Honour will be awarded to those Students who show superior proficiency in any of the classes.

The Rymer Gold Medal for General Proficiency, value £5, will be awarded annually to the most distinguished Student of the year. His general conduct and attendance must have been in every respect satisfactory. At the time of the special examination for the Rymer Medal the Student must not hold any qualification. The Medal will be awarded on the understanding that the Student completes the Dental curriculum.

The Public Distribution of Prizes will take place at the commencement of the Summer Session.

THOMAS GADDES, *Dean*.

GENERAL HOSPITALS.

CHARING CROSS HOSPITAL.

Dental Surgeon, J. Fairbank, M.R.C.S., who attends at the Hospital three days a week for Dental operations. A course of Lectures on Dental Surgery is also given during January, February, and March.

The fee at this hospital for the L.D.S. Course is £42 2s., which may be paid in two instalments; this includes the matriculation fee of £2 2s., for which the student enjoys all the privileges of a matriculated student, which are as follows:

1st. They pay a proportionately lower amount of fees.

2nd. They alone are eligible for the following offices and appointments:—Resident medical officer, resident surgical officer, resident accoucheur, assistant demonstrator, pathological assistant, clinical clerks, dressers, Dentist's assistant.

3rd. They are admitted to the use of the library and reading rooms.

4th. They are admitted, without additional fee, to the clinical and pathological demonstrations, and enjoy other advantages.

* These Lectures are free to Students of the College who have fully entered for the Special Lectures.

5th. They alone are entitled to compete for the scholarships.

Two prizes are awarded annually in the class of Lectures on Dental Surgery, of the value of Six Guineas and Four Guineas respectively.

Students may serve as assistants to the Dental Surgeon for a period of three months.

The attention of Dental students is drawn to the re-arrangements which have been made in the hours of Lectures, so as to enable students to attend the practice at the Dental Hospital.

For further information apply to the Dean, Francis Hird, Esq., at the Hospital.

GUY'S HOSPITAL MEDICAL AND SURGICAL SCHOOL.

Dental Surgeon, H. Moon, M.R.C.S., L.D.S.

Dressers are appointed to the Dental Surgeon, and hold office for two months, each receiving special certificates.

Practical instruction in Dental Surgery is given every Tuesday at 1.30 and Thursday at 12.30 o'clock. A certain number of cases of cleft palate, perforate palate, irregularities, lost portions of jaw, &c., are constantly under treatment for the instruction of students, the necessary apparatus being supplied at the expense of the hospital.

A course of Lectures on Dental Surgery is delivered during the Summer Session, and special instruction is given on this subject in the Surgery, by Mr. Moon, throughout the year.

Application respecting the School may be made to the Dean, Dr. F. Taylor.

LONDON HOSPITAL MEDICAL COLLEGE.

Dental Surgeon, Ashley Barrett, M.B. Lond., M.R.C.S.

The Council of the College of Surgeons recognise the Dental Department of the London Hospital as a school at which may be obtained the Dental Practice necessary to qualify a student for the Examination for the Dental Diploma. Dental students may obtain the General Medical Education (that is, apart from certain Special Lectures to be attended at a Dental School) and the Dental Practice, necessary for the Diploma, at the London Hospital School, on payment of 40 guineas.

A course of Lectures on the Anatomy and Pathology of the Teeth, and Dental Surgery, will be delivered by Mr. Ashley Barrett on days which will be duly announced. It comprises the Form and Arrangement of the Dental Organs; Structure of the Human Tooth; its mode of development; Abnormalities and Irregularities of the Teeth, with the mode of treating the latter; Dental Caries, and its treatment; Periodontitis, its cause and treatment. Mr. Barrett gives practical instruction on Tuesdays at 9 a.m., which is open to all students of the School and Hospital, and can be attended by gentlemen who are not pupils, on payment of a fee of 10 guineas.

A *Dental Assistant* is elected every three months, without any additional expense. The terms of office date from the first Tuesday in January, April, July, and October. In selecting Candidates priority will be given to those who have attended the greatest number of Lectures on Dental Pathology and Surgery, and have also been the most punctual in attendance in the Dental Department on Tuesday mornings.

Further information may be obtained on application to Mr. Munro Scott, the Warden, Medical College, London Hospital.

MIDDLESEX HOSPITAL.

Consulting Dental Surgeon, J. Tomes, F.R.S., M.R.C.S., L.D.S.

Dental Surgeon, J. S. Turner, M.R.C.S., L.D.S.

Assistant Dental Surgeon, W. Storer Bennett, F.R.C.S., L.R.C.P., L.D.S.

Students who intend to become Licentiates in Dental Surgery of the Royal College of Surgeons are admitted to attend the requisite courses of Lectures and Hospital Practice on payment of a fee of 40 guineas, in one payment, or by instalments of £30 on entrance, and £15 at the beginning of the second Winter Session.

A short course of Lectures on Dental Surgery will be delivered during

November and December by the Lecturer on Dental Surgery, Mr. J. S. Turner. The Lectures will be supplemented by practical demonstrations, which will be given every week during the Winter and Summer Sessions by the Dental Surgeon and Assistant Dental Surgeon. Students of the hospital free, others pay a fee of 5 guineas.

Further information may be obtained from Andrew Clark, Esq., the Dean; or from the Resident Medical Officer at the hospital.

ST. BARTHOLOMEW'S HOSPITAL AND COLLEGE.

Dental Surgeon and Lecturer, Alfred Coleman, F.R.C.S., L.D.S. Eng.

Assistant Dental Surgeons, Isidore J. Lyons, M.R.C.S., L.D.S., and Francis Ewbank, M.R.C.S., L.S.A.

The Dental Department of the hospital is open on Tuesday and Friday mornings at 9 o'clock. The practice of the department is recognised by the Royal College of Surgeons.

Lectures on Dental Surgery, Anatomy, Physiology, and Pathology, on Saturdays, at 10.30 a.m., during the months of October, November, and December; the fee for one course is £2 12s. 6d., unlimited £4 4s. These Lectures are recognised by the Royal College of Surgeons as a course of Dental Surgery required for the Dental Diploma.

The fee for general subjects for Dental students for the first winter is £33 2s. 6d., for the first summer £33 2s. 6d., or a single payment of £66 3s.

This hospital is the oldest and one of the largest in London, and among many other advantages which it offers the student is that provision is made for their residence in the College, on the recommendation of a medical officer of the hospital. For the terms of board and residence and all other information regarding the College, application should be made, either personally or by letter, to the Warden of the College, Dr. Moore.

ST. GEORGE'S HOSPITAL.

Dental Surgeon, A. Winterbottom, F.R.C.S., L.D.S.

Mr. Winterbottom attends at the hospital on Tuesdays and Saturdays at 9 a.m.

A course of Lectures on Dental Surgery is given by Mr. Winterbottom in the Summer Session. Free to students of the hospital.

Fee for general subjects in Dental Surgery, including Practical Chemistry, £55. Payable in two instalments: First year, £30; second year, £25.

Further information can be obtained by application to Dr. Wadham, Dean of the Medical School.

ST. MARY'S HOSPITAL MEDICAL SCHOOL.

Dental Surgeon, H. Howard Hayward, M.R.C.S., L.D.S.

Practical instruction in Dental operations is given on Wednesdays and Saturdays at 9.30 a.m. Dressers are appointed who hold office for three months. Also a special course of Lectures on Dental Surgery.

Fee for the course £2 12s. 6d.

Further information may be obtained by application to A. B. Shepherd, M.D., Dean of the School. (See Advertisement.)

UNIVERSITY COLLEGE HOSPITAL.

Dental Surgeon, G. A. Ibbetson, F.R.C.S., L.D.S.

Mr. Ibbetson gives a course of Twelve Lectures at University College on Mondays and Thursdays, at 4 p.m., beginning on January 8th. Fee £2 2s. These Lectures on Dental Surgery are recognised by the Royal College of Surgeons as qualifying for the Diploma in Dental Surgery. A silver medal in this class is awarded to the most proficient student.

Lectures on Clinical Surgery, once a fortnight or oftener, by Professor Marshall and Professor Hill; Mr. Erichsen and Sir Henry Thompson, Emeritus Professors of Clinical Surgery, will deliver short Courses during the Session.

Mr. Christopher Heath, the Holme Professor of Clinical Surgery, will give

a Clinical Lecture, and also hold a clinical examination on surgical cases once a week.

Mr. Marcus Beck, M.S., M.B., and Mr. Arthur E. Barker, the Assistant Professors of Clinical Surgery, will also hold written and *vivâ voce* examinations of the students throughout the year, and during May, June, and July, will instruct the second year's students in the observation and examination of patients twice a week, as required by the Royal College of Surgeons.

ST. THOMAS'S HOSPITAL.

Dental Surgeon, John W. Elliott, M.R.C.S., L.D.S.

Assistant Dental Surgeon, William Gill Ranger, M.R.C.S.

Gentlemen may receive instruction in diseases of the teeth, are appointed dressers, and can undertake operations, subject to the supervision of the Dental Surgeons, Tuesdays and Fridays at 10 a.m.

Numerous cases of irregularity of the teeth, stoppings, and the application of artificial appliances are undertaken during the term.

The fee for attendance on the *general* subjects required of the students in Dental Surgery is for the two years £55, or by instalments, £50 for the first year and £10 for the second year.

Dental practice, one year, 2 guineas, perpetual, 3 guineas.

For further information apply to Dr. Gillespie, Medical Secretary.

WESTMINSTER HOSPITAL.

Dental Surgeon, J. Walker, M.D., M.R.C.S., L.D.S.

Dr. Walker attends at 9 a.m. on Wednesdays and Saturdays for practical demonstration of diseases and operations on the teeth. A second Dental Surgeon will be appointed.

The fee for attendance on the Dental Practice is £2 2s. for three months and £3 3s. for six months. The whole of the General Lectures and Surgical Practice required for the Dental Diploma of the College of Surgeons can be attended for £50, in one sum, on entrance, or for two sums of £32 10s. and £20, payable at the beginning of each year.

Dr. Walker will deliver a course of Lectures on Dental Surgery and Pathology on Wednesdays, in October, November, and December, at 9.30 a.m.

Classes in Metallurgy in its application to Dental purposes, Dental Anatomy and Physiology, and in Dental Mechanics, will be formed should a sufficient number of students give in their names.

The Calendar will be forwarded on application to Dr. W. H. Allchin, Dean of the School, who will afford every information.

EDINBURGH.

DENTAL HOSPITAL AND SCHOOL.

HOSPITAL STAFF.

Consulting Officers.

ALEX. PEDDIE, M.D., F.R.C.P.E.	.	.	Physician.
JOSEPH BELL, F.R.C.S.E.	.	.	Surgeon.
Dr. JOHN SMITH, F.R.C.S.E.	.	.	Surgeon Dentist.

Dental Surgeons.

CHARLES MATTHEW, L.D.S. Edin.		MATTHEW FINLAYSON, L.D.S. Edin.
JOHN T. CUNNINGHAM, L.D.S. Eng.		ANDREW WILSON, L.D.S. Edin.
WILLIAM BOWMAN MACLEOD, L.D.S. Edin.		GEORGE W. WATSON, L.D.S. Edin.
		MALCOLM MACGREGOR, L.D.S. Edin.

Assistant Dental Surgeons.

EDWIN A. CORMACK, L.D.S., Edin.		JAMES MACKINTOSH.
J. STEWART DURWARD, L.D.S., Edin.		JAMES LINDSAY, L.D.S. Edin.
JAMES COOPER.		W. FORRESTER.

Honorary Treasurer and Dean.

WM. BOWMAN MACLEOD, L.D.S., 43, George Square.

While the Directors cannot formulate a course of study suited to every case, they venture to submit the subjoined scheme as an assistance to intending Students, which may guide them in utilising their time, and show them the probable cost of Dental Education :

1. Pass Preliminary Examination.

2. Register yourself as a Dental Student, for which forms may be obtained on application to the Registrar, General Medical Council, 219, Oxford Street, London, W.

One year's *bonâ fide* apprenticeship with a Registered Dental Practitioner *after being registered* as a Dental Student may be counted as one of the four years of professional study.

The three years of instruction in Mechanical Dentistry, or any part of them, may be taken by the Dental Student either before or after registration as a Student, but no year of such mechanical instruction shall be counted as one of the four years of professional study unless taken after registration.

FIRST YEAR: WINTER AND SUMMER.—Devote entirely to acquirement of Mechanical Dentistry.

SECOND YEAR: WINTER SESSION.—Dental Hospital, 9 to 10; Chemistry, 10 to 11; Practical Anatomy and Demonstrations, 11 to 1.

SUMMER SESSION.—Gold Clinics, 8 to 9, Monday and Thursday; Dental Hospital, 9 to 10; Practical Chemistry, 10 to 11; Practical Anatomy and Demonstrations, 11 to 1.

THIRD YEAR: WINTER SESSION.—Dental Hospital, 9 to 10 or 10.30; Physiology, 11 to 12; Anatomy, 1 to 2.

At this stage the Student may go up for the First Professional Examination—Fee, £4 4s.

SUMMER SESSION.—Materia Medica, 9 to 10.

FOURTH YEAR: WINTER SESSION.—Medicine, 9 to 10; Surgery, 10 to 11; Infirmary, 12 to 1 (six months, £4 4s.); Materia Medica,* 2 to 3; Dental Anatomy, 8 to 9 p.m. every Tuesday and Friday; Dental Mechanics, 8 to 9 p.m. every Wednesday.

SUMMER SESSION.—Dental Hospital, 9 to 10; Clinical Surgery, 12 to 1; Dental Surgery, 8 to 9 p.m., Tuesdays and Fridays.

Final Examination—Fee, £6 6s.

MINIMUM COST OF CLASSES.—Second Winter, £23 4s.; Second Summer, £5 5s.; Third Winter, £6 10s.; Third Summer, £3 5s.; Fourth Winter, £19 6s.; Fourth Summer, £6 10s.

EXAMINATIONS.—Preliminary, 10s.; Professional, £10 10s.—£11; Total, cost, £75.

Notes.

Those who have begun their Professional Education prior to 1st August, 1878, do not require to pass the Preliminary Examination.

Students who commenced their Professional Education prior to 1st August, 1878, may arrange with the Treasurer to pay the Dental Hospital Fee in four half-yearly instalments.

The Fee for Gold Clinics [one course] is included in the Dental Hospital Fee of £15 15s.

Students may begin with the Winter or Summer Sessions, and may go up for Examination upon completing required studies at any of the stated times, of which there are usually five during the year, viz. October, January, March, April, and July.

HOSPITAL PRACTICE.—The Hospital Practice includes Extractions, Stop-pings, Regulating Cases, &c., which will be undertaken by the Senior Students, under the supervision of the Dental Surgeons in attendance. Students must provide their own Stopping Instruments.

DENTAL SCHOOL.

LECTURES.

DENTAL ANATOMY AND PHYSIOLOGY (Human and Comparative), by A.

* The Student may defer the Materia Medica till the Fourth Year, Winter Session (*q.v.*), in which case the Dental Hospital Practice may be continued.

WILSON, L.D.S. (Edin.).—These Lectures will be delivered on the Evenings of Tuesday and Friday, at 8 o'clock, commencing on 7th November, 1882. The Course, consisting of twenty-four Lectures, will be illustrated by preparations, models, diagrams, microscopical specimens, &c.

DENTAL SURGERY AND PATHOLOGY, by GEORGE W. WATSON, L.D.S. (Edin.).—These Lectures will be delivered on the Evenings of Tuesday and Friday, at 8 o'clock, during the Summer Session, commencing 3rd May, 1883. The Course, consisting of twenty Lectures, will be illustrated by preparations, models, diagrams, microscopical preparations, &c.

MECHANICAL DENTISTRY, by W. BOWMAN MACLEOD, L.D.S. (Edin.).—The Lectures will commence on 8th November, 1882, at 8 p.m., and be continued every Wednesday thereafter till the Course of at least twelve Lectures is concluded.

PRACTICAL MECHANICS, Assistant Demonstrator J. STEWART DURWARD, L.D.S. (Edin.).—In addition to the Systematic Lectures there will be given during the Session Demonstrations on Dental Mechanics, and each Student will be expected to prepare the mouth, take the impression, make the denture, and insert the same in at least four cases. The Demonstrations will be spread over the two years of Hospital practice, and will be given as occasion serves. Students will require to furnish their own hand tools.

GOLD FILLING, by C. MATTHEW, L.D.S. (Edin.).—In this Class Senior Students will receive instruction in various methods of Gold Filling, &c. The Course, consisting of ten Demonstrations, will commence on the first Monday of May, 1883, at 8 a.m., and be continued every Monday and Thursday thereafter till the Course is completed.

In the various classes prizes will be offered for competition.

GENERAL FEE FOR THE HOSPITAL PRACTICE AND SPECIAL LECTURES REQUIRED BY THE CURRICULUM.—Hospital Practice, including one course of Demonstrations in Gold Filling, £15 15s. One course each of Dental Anatomy, Dental Surgery, and Mechanical Dentistry and Demonstrations, £9 15s.—£25 10s.

FEES TO SEPARATE CLASSES.—Dental Anatomy, Dental Surgery, Mechanical Dentistry, Gold Filling, £3 5s. each.

The Hospital Practice and Lectures qualify for the Dental Diplomas of the Royal College of Surgeons, Edinburgh, and also for that of the other Licensing Bodies. Second courses of the Lectures, as required by the Royal College of Surgeons of England, £2 4s.

For further information apply to the Dean, who will be found at the Hospital every Wednesday morning between 9 and 10 o'clock.

GLASGOW.

DENTAL HOSPITAL AND SCHOOL, ANDERSON'S COLLEGE.

HOSPITAL STAFF.

Hon. Consulting Physician.—Professor CHARTERIS, M.D., &c.

Hon. Consulting Surgeon.—Professor MORTON, M.D., &c.

Chloroformist.—WILLIAM MUIR, M.B., C.M.

Dental Surgeons.

GEORGE BUCHANAN.

JAMES CUMMING, L.D.S.F.P.S.G.

W. S. WOODBURN, L.D.S.F.P.S.G.

JOHN FOULDS, L.D.S.F.P.S.G.

JOHN AUSTIN BIGGS.

J. R. BROWNIE, L.D.S., R.C.S.
Eng.

DAVID TAYLOR, M.D., L.D.S.

Dental House Surgeon.—A. B. YOUNG, L.D.S.

The Hospital is open daily, except Sunday, at 8 a.m., and patients are received till 10 o'clock. *Anæsthetics* administered, when required, at 9 a.m.

The work of the Hospital is conducted, as far as possible, by the Students,

under the supervision of the Dental Officer of the day. Cases of special interest will be made the subject of clinical instruction or demonstration as they occur.

The practice of the Hospital may be entered upon at any time during the Session, and attendance dated therefrom. Fee for the two years' practice required by the curriculum, £10 10s. Fee for each course of Lectures, £2 2s.

THE DENTAL STUDENTS' SOCIETY meets once a month in the Committee Room of the Hospital, when papers on subjects of interest are read and discussed by the Members.

DENTAL SCHOOL.

Secretary to the Dental Lecturers.—DAVID TAYLOR, M.D., L.D.S. Glasg.

DENTAL ANATOMY AND PHYSIOLOGY, HUMAN AND COMPARATIVE, by DAVID TAYLOR, M.D., L.D.S. Glasg.

The Lectures will be delivered in the Summer Session, on the Mornings of Wednesday and Friday, at 8 a.m., and will be illustrated by Diagrams, Preparations, and Microscopic Specimens. Text-Book—Tomes's Manual of Dental Anatomy, Human and Comparative.

DENTAL SURGERY AND PATHOLOGY, by JAMES RANKIN BROWNLIE, L.D.S. Eng.

These Lectures are delivered on Tuesdays and Thursdays, during the months of May and June, at 8 a.m., and are illustrated by recent Specimens, and other Preparations, and Drawings, &c. Text-Books—Tomes's Manual of Dental Surgery; Salter's Dental Pathology and Surgery; Harris's Principles and Practice of Dentistry.

MECHANICAL DENTISTRY, by W. S. WOODBURN, L.D.S. Glasg.

This Course will commence on the first Thursday of October, at 8 o'clock p.m., and will consist of 12 Lectures, with Practical Demonstrations in the Dental Laboratory.

All communications on matters relating to the Dental School should be addressed to Dr. DAVID TAYLOR, 144, Wellington Street, Glasgow, who will forward detailed Prospectus of the School.

DUBLIN.

DENTAL HOSPITAL AND SCHOOL OF DENTAL SURGERY, BERESFORD PLACE.

Consulting Physicians.

THOMAS HAYDEN, F.K.Q.C.P.I. | GEORGE F. DUFFEY, F.K.Q.C.P.I.

Consulting Surgeons.

EDWARD D. MAPOTHER, M.D. | HENRY GRAY CROLY F.R.C.S.I.

Dental Surgeons.

G. M. P. MURRAY, L.R.C.S.I. | HENRY SHERLOCK, F.R.C.S.I.
J. H. LONGFORD, L.D.S.R.C.S.I. | F. TAYLOR, L.D.S.I.

Hon. Treasurer.—J. H. LONGFORD.

Hon Secretary.—H. G. SHERLOCK, F.R.C.S.I.

This Hospital is visited daily at 9.30; practical instruction is given in all branches of Dental Surgery, and Clinical Lectures are delivered in conformity with the Curriculum of the Royal College of Surgeons of Ireland. The Fee is £3 3s. for one Session, and £5 5s. for two.

BIRMINGHAM.

BIRMINGHAM SCHOOL OF DENTISTRY, QUEEN'S COLLEGE.

The teaching of Dentistry is now undertaken by the Queen's College, acting in association with the Birmingham Dental Hospital and the Birmingham Clinical Board, so that students may fully qualify themselves for the Dental Diploma of the Royal Colleges.

The Dental Hospital is situated near the College, and is open daily (Sundays excepted). The number of patients treated there during the year 1881 was upwards of 7000.

The General and Queen's Hospitals offer every advantage for the study of General Surgery and Medicine, the arrangements for which are carried out under the direction of the Birmingham Clinical Board.

The Regulations relating to the Diploma in Dental Surgery of the Royal College of Surgeons of England may be obtained on application to the Warden.

LECTURES FOR THE DENTAL CURRICULUM.

WINTER SESSION.

Special Subjects.

DENTAL ANATOMY AND PHYSIOLOGY.—F. ROBERT BATCHELOR, L.D.S.I., Dental Surgeon to the Dental Hospital. Thursdays, at 5 p.m.

DENTAL SURGERY AND PATHOLOGY.—THOMAS HOWKINS, M.R.C.S. Fridays, at 5 p.m.

DENTAL METALLURGY.—W. A. TILDEN, D.Sc., F.R.S. N.B.—This Class will be held at Mason College. About ten lectures on this subject will be given in the course of the Winter Session, due notice of which will be given.

General Subjects.

Anatomy, Practical Anatomy, Physiology, Chemistry, Medicine, Surgery. These Classes are similar to those in the Medical Department.

SUMMER SESSION.

Special Subject.

DENTAL MECHANICS.—CHARLES SIMS, L.D.S.E., Senior Dental Surgeon to the Dental and Queen's Hospitals. Wednesdays, at 5 p.m.

General Subjects.

MATERIA MEDICA AND THERAPEUTICS. PRACTICAL CHEMISTRY.—These Classes are similar to those in the Medical Department.

FEES.

A Composition Fee of 75 guineas, payable in one sum, or in two sums, viz.: 50 guineas at the beginning of the first year, and 25 guineas at the beginning of the second year of studentship, admits to the full curriculum required for the Dental Diploma (inclusive of the necessary Hospital Practice).

N.B.—Further particulars may be obtained on application to the Warden at the College, or to Mr. Charles Sims, at 51, Union Passage, Birmingham.

DENTAL HOSPITAL, NEWHALL STREET.

Open daily at 9 a.m.

STAFF.

Consulting Physician.—JAMES SAWYER, M.D. Lond., M.R.C.P., Senior Physician to the Queen's Hospital.

Consulting Surgeon.—JAMES F. WEST, F.R.C.S., Senior Surgeon to the Queen's Hospital.

Consulting Dentists.

THOMAS R. ENGLISH.

| ADAMS PARKER, L.D.S., R.C.S.E.

Administrators of Anæsthetics.

F. H. MABERLEY, M.R.C.S., L.R.C.P.E. | J. W. MOORE, M.R.C.S.

*Dental Surgeons.**Days of Attendance.*

CHARLES SIMS, L.D.S., R.C.S. Eng. Wednesdays.

H. BREWARD NEALE, L.D.S., R.C.S.I. Thursdays.

F. R. BATCHELOR, L.D.S., R.C.S.I. Mondays and Fridays.

F. E. HUXLEY, M.R.C.S., L.D.S. Tuesdays and Saturdays.

Hon. Secretary to the Surgical Committee.—H. BREWARD NEALE.

DEMONSTRATIONS.

Clinical Demonstrations will be given from time to time by the Staff on cases of particular interest; also upon the Preparing and Filling of Cavities, and other operations upon the teeth and contiguous structures.

DRESSERSHIPS IN THE EXTRACTION ROOM.

These appointments are held for three months by senior and junior Students of the Hospital. The respective dressers for each day are required to be in attendance from 9 o'clock till the conclusion of the practice; and they will be under the direction of the Dental Surgeon in attendance.

The Fees are as follows:

Composition Fee for the whole of the Lectures and Hospital Practice, Special and General, required for L.D.S. Diploma, 75 guineas.

Dental Hospital Practice:

If taken separately, 2 years £14 14 0

" " 1 year 8 8 0

" " 6 months 5 5 0

For further information connected with the School apply to the Dental Secretary, H. BREWARD NEALE, Esq., Newhall Street, with whom Students are required to register their names for Hospital Practice.

LIVERPOOL.

DENTAL HOSPITAL, MOUNT PLEASANT.

Consulting Physician.—THOMAS ROBINSON GLYNN, M.D., M.R.C.P. Lond., &c.

Consulting Surgeon.—W. MITCHELL BANKS, M.D., F.R.C.S.

Consulting Dental Surgeons.

W. J. NEWMAN, L.D.S.I., and R. E. STEWART, L.D.S. Eng.

Dental Surgeons.

THOMAS F. AUSTIN.

J. G. ROBERTS, L.D.S.I.

WILLIAM T. BRYAN.

D. DOPSON, L.D.S.I.

W. H. WAITE, D.D.S., L.D.S.I.

J. N. P. NEWTON, L.D.S. Eng., D.D.S.

Assistant Dental Surgeons.—CHAS T. STEWART, and E. A. COUNCELL, L.D.S. Eng.

This Hospital is a School of Practical Dental Surgery duly recognised by the Royal College of Surgeons and open to all Students of Dentistry, under such regulations as shall be determined by the Committee of Management.

The Hospital is open daily for admission of patients from 8.30 till 10 a.m., and from 6 to 7 p.m.

Fees for Hospital practice £5 5s. per annum to students of the Liverpool Royal Infirmary School of Medicine and pupils or apprentices of registered Dentists.

Further information may be obtained by applying to the Honorary Secretary, W. L. JACKSON, c, Queen Insurance Buildings, 10, Dale Street.

PLYMOUTH.

DENTAL DISPENSARY, OCTAGON.

Physician.—C. ALBERT HINGSTON, M.D. Lond.

Surgeons.

CHRISTOPHER BULTEEL, F.R.C.S. | CONNELL WHIPPLE, M.R.C.S.

Consulting Dentists.

STRATTON J. COLES. | F. A. JEWERS.

Dental Surgeons.

W. V. MOORE, D.L.R.C.S.E. | FRANCIS H. BALKWILL, D.L.R.C.S.E.
C. SPENCE BATE, F.R.S., D.L.R.C.S.E., | ERNEST E. JEWERS, L.D.S. Eng.
&c. | ALFRED GEORGE HAMBLY, L.D.S.I.

Treasurer.—ALFRED PAYNE BALKWILL.

The Dentists attend each day at 9 a.m. except Sundays and Saturdays.

DENTAL SCHOOL.

Certificates of attendance on the practice of this Dental Dispensary are recognised by the College of Surgeons as qualifying for the Diploma in Dental Surgery. The College also recognises the lectures delivered at the Dispensary.

Pupils of any of the Dental Surgeons of the Plymouth Dental Dispensary, or other Dentists holding a Diploma of the College of Surgeons, or Member of the Odontological Society, may attend the Dispensary on the day of such practitioner as may agree to accept such pupil or pupils, on the payment of £1 1s. per annum to the institution.

LECTURES.

On "Dental Physiology," by C. SPENCE BATE, F.R.S., L.D.S., R.C.S.E.

On "Dental Anatomy," by F. H. BALKWILL, L.D.S., R.C.S.E.

On "Dental Mechanics," by W. V. MOORE, L.D.S., R.C.S.E.

Fee to Lectures, one Course, £7 7s.

Fee to Lectures, double Course, £12 12s. (required for Diploma).

Fee to Dental Practice at Dispensary, £5 5s. per annum.

Fee to entire Dental Curriculum (required for Diploma), 22 Guineas.

Further information may be obtained from the Secretary, E. G. BENNETT, Esq., at above address.

EXETER.

DENTAL HOSPITAL.

Consulting Surgeons.

A. J. CUMMING, F.R.C.S. Eng. | WM. CLAPP, F.R.C.S. Eng.

Surgeon-Administrator of Anæsthetics.—W. A. BUDD, M.R.C.S. Eng.

Dental Surgeons.

J. T. BROWNE-MASON, L.D.S. Eng. | C. NORMAN KING, L.D.S.I.

S. BEVAN FOX, L.D.S. Eng. | T. G. T. GARLAND, L.D.S.I.

HENRY BIGING MASON, L.D.S. Eng.

Honorary Secretary.—HENRY B. MASON.

Attendance on the Practice of this Hospital is recognised by the Royal College of Surgeons of England as qualifying for their Dental Diploma.

The Hospital is open daily (Sundays excepted), and patients are admitted between the hours of 9 and 11 a.m.

Pupils of any member of the staff, or other Registered Practitioner (being a Life or Annual Governor), are permitted to attend the practice of the Hospital, subject to the approval of the Medical Sub-Committee, on payment of Five Guineas annually to the funds of the Institution. Students attending the practice of the Hospital must consider themselves strictly under the control of the Medical Officers, and must not undertake any operation without the consent of the Dental Surgeon for the day.

PRIVATE SCHOOL OF ANATOMY, PHYSIOLOGY, AND SURGERY.

Demonstrations and lectures by Mr. Thomas Cooke, F.R.C.S., Senior Assistant Surgeon to the Westminster Hospital.

This School of Anatomy, Physiology, and Surgery meets the requirements of two distinct classes of students, *i.e.*—1. Advanced students and qualified practitioners, who may wish either to extend their knowledge of the foregoing subjects, or to recall to mind what they once knew and have since forgotten; 2. Beginners entering upon their medical duties by a short term of apprenticeship with a general practitioner. For the former, rapid advanced classes, complete in three months, but still thoroughly practical, are provided; and for the latter, more elementary classes of six months' duration, also thoroughly practical.

The Operations of Surgery are all performed on the dead body by the students.

The dissecting-room is open daily from 10 a.m. to 6 p.m. The Demonstrators attend four hours daily.

Fees.—Anatomy and Physiology: For Primary Membership Examination of Royal College of Surgeons, three months, £4 4s.; six months, £5 5s. For Primary Fellowship Examination (with Comparative Anatomy), six months, £5 5s. Surgery: For Second Membership Examination of Royal College of Surgeons, three months, £5 5s.; six months, £8 8s.; for Second Fellowship Examination, six months, £8 8s. (See Advertisement.)

IV.—SCIENTIFIC ASSOCIATIONS.

ODONTOLOGICAL SOCIETY OF GREAT BRITAIN.

President.—Samuel Lee Rymer.

Vice-Presidents.

RESIDENT.
J. Smith Turner.
Charles S. Tomes.
Henry Moon.

NON-RESIDENT.
J. E. Rose (Liverpool).
Walter Campbell (Dundee).
William Doherty (Dublin).

Treasurer.—James Parkinson.

Librarian.—Felix Weiss.

Curator.—S. J. Hutchinson.

Honorary Secretaries.

J. Howard Mummery (for Foreign
Correspondence.)

F. Canton (Council).
T. F. Ken Underwood (Society).

Councillors.

RESIDENT.—T. Chartres White; G. Wallis; W. F. Henry; Alfred Coleman; J. Stocken; Dr. Walker; I. I. Lyons; G. A. Ibbetson; A. Gibbings.

NON-RESIDENT.—W. Williamson (Aberdeen); J. E. Palmer (Peterboro'); William Fothergill (Darlington); A. Jepson (Leamington); Martin Magor (Penzance).

EXTRACTS FROM THE BYE-LAWS.

Objects and Constitution of the Society.

This Society is instituted for the encouragement and diffusion of knowledge in Dental Surgery, and for the promotion of intercourse among members of the Dental Profession.

The Society shall consist of resident, non-resident, corresponding, and honorary members.*

* The following bye-law will come into force this year :

"That on and after November 1st, 1882, candidates for the Resident, Non-Resident, or Corresponding Membership of the Society shall not be eligible unless they practise as Dental Surgeons, or are interested in the progress of

1. The resident members shall consist of gentlemen practising as Dental Surgeons in London, or within ten miles of the General Post Office, St. Martin's-le-Grand.
2. The non-resident members shall consist of gentlemen practising as Dental Surgeons residing beyond ten miles from London.
3. The corresponding members shall consist of distinguished gentlemen practising as Dental Surgeons, residing in the Colonies of Great Britain or foreign countries.
4. The honorary members shall consist of distinguished practitioners of Dental Surgery who have retired from practice, of distinguished medical practitioners, and of gentlemen distinguished in any department of science.

Persons who advertise in the public journals or by circular, either their profession or their professional attainments or public appointments, or anything relating to their mode of practice or charges, or who expose for public inspection specimens of operative or mechanical Dentistry, or conduct their practice in any way which in the opinion of the Council of this Society is derogatory to the respectability of the profession, shall not be considered eligible for nomination as members.

No person being the proprietor of a secret remedy, or holding a patent relating to the requirements of Dental practice shall be a member of this Society.

Election and admission of Resident and Non-Resident Members.

Recommendations for resident members shall be signed by two members from personal knowledge, and by two or more from general knowledge. Recommendations for non-resident members may be signed by one member only from personal knowledge and by two or more from general knowledge.

All recommendations for resident or non-resident members shall be submitted to and approved of by the Council before being proposed to the Society for ballot.

Contributions of Members.

Every person elected a resident member shall pay three guineas as an admission fee, and an annual subscription of two guineas, *in advance*.

Every person elected a non-resident member shall pay two guineas as an admission fee, and an annual subscription of one guinea, *in advance*.

The entrance fees and first annual subscription shall be paid on admission, and the subsequent annual subscriptions in the month of November in each year; but new members, proposed at or after the annual meeting, shall not be required to pay any subscription for the current session.

Ordinary Meetings.

The ordinary meetings of the Society shall be held on the first Monday in each month, from November to June, both inclusive, at 8 p.m. precisely, except in the month of January.

Each member may introduce two visitors at these meetings, on writing the visitors' names in a book to be kept for that purpose. The same visitors shall not be admitted more than three times during one session.

Annual General Meeting.

The annual general meeting of the Society for the election of the officers and councillors, &c., shall be held on the evening of the second Monday in January every year.

Society's Transactions.

The Transactions of the Society, under the designation of 'Transactions of the Odontological Society of Great Britain,' shall be printed at such times and in such manner as the Council shall direct.

The 'Transactions' shall be presented to all resident and non-resident members of the Society, who have paid their annual subscriptions.

Dental Surgery, and are also Licentiates in Dental Surgery, or qualified Practitioners of Medicine or Surgery; or possess such a Diploma or Degree as in the opinion of the Council will qualify them for the Membership of the Society."

ODONTO-CHIRURGICAL SOCIETY OF SCOTLAND.

President.—J. Smith, M.D., F.R.C.S. Ed.

Vice-Presidents.

A. Wilson, L.D.S. Ed.

Joseph Walker, M.D., L.D.S. Eng. (Lond.).

Treasurer.—Matthew Finlayson, L.D.S. Edin.

Secretary.—Wm. Bowman Macleod, L.D.S. Edin.

Curator and Librarian.—G. W. Watson, L.D.S. Edin.

Council.

Walter Campbell, L.D.S. Eng. (Dundee).

Leon J. Platt, L.D.S. Edin. (Stirling).

Malcolm MacGregor, L.D.S. Edin.

Austin Biggs, Glasgow.

Ordinary Meetings.

The Society meets on the second Thursdays of November, December, January, and February, and on the 13th of March.

EXTRACTS FROM THE CONSTITUTION AND LAWS.

Name and Objects.

The Society shall be named the "Odonto-Chirurgical Society," and shall have for its objects the Promotion and Diffusion of Knowledge in matters connected with Dental Surgery; the furtherance of communications on such subjects by Members of the Society; and otherwise to advance the interests of Dental Surgery as a branch of medicine.

Ordinary and Honorary Members.

The Society shall consist of Ordinary, Honorary, and Corresponding Members:

The Ordinary Members shall consist of Gentlemen practising as Dentists in Great Britain, and of Medical and Surgical Practitioners interested in Dental Surgery.

The Honorary and Corresponding Members shall consist of Gentlemen practising Dentistry in Great Britain, in the Colonies, or in Foreign Countries, and of retired Dental Practitioners in Britain, as well as such Medical or generally Scientific men as may have distinguished themselves in connection with Dental Surgery.

The Ordinary Members shall have vested in them the Government of the Society, and all cases not otherwise specified shall be decided by them by a majority of votes, by ballot, if required.

Obligations of Members.

No Members shall be permitted to advertise his profession, his modes of practice, or his charges, either in the public journals or by circular. They shall not be permitted to expose specimens of their work for public inspection, nor to carry on their practice in connection with any other business, nor to hold any patent relating to Dental practice, nor to conduct themselves in any way which the Society may consider derogatory to the Profession, so long as they continue Members of the Society. But Members who practise in towns other than that in which they reside shall be allowed to intimate their visits; such intimations being subject to the approval of the Council.

Application for Membership.

Candidates for admission as Members of the Society shall be recommended by an Ordinary Member, and the recommendation seconded by another. After being approved by the Council, such recommendation shall be read to the Society at an Ordinary Meeting, and shall lie over till the next, when the Candidate shall be balloted for, when two thirds of the Members present must be in his favour to secure his election.

Contributions.

Ordinary Members residing within a ten mile radius of the city shall pay an Entrance Fee of One Guinea, and one Guinea of an Annual Subscription, in advance. All other Ordinary Members shall pay an Entrance Fee of One Guinea, and Ten Shillings and Sixpence of an Annual Subscription. All Annual Subscriptions to date from the 1st of March preceding the Candidate's admission.

ASSOCIATION OF SURGEONS PRACTISING DENTAL SURGERY, 11, CHANDOS STREET, CAVENDISH SQUARE.

President.—Samuel Cartwright, Esq.

Vice-Presidents.

J. A. Baker.
W. A. N. Cattlin.
Francis Brodie Imlach.
Thomas Edgelow.

Dr. Orphoot.
S. J. A. Salter, F.R.S.
Dr. Smith, F.R.S. Edin.

Treasurer.—S. Hamilton Cartwright.

Hon. Sec.—J. Hamilton Craigie.

Council.

E. Bartlett.
T. W. W. Fay.
F. Fox.

Chas. Gaine (Bath).
W. Ranger.
Augustus Winterbottom.

As the name implies, only those possessed of a registrable Medical or Surgical qualification are eligible for the Fellowship of this Society.

THE BRITISH DENTAL ASSOCIATION.

Henry Campion, M.R.C.S., *President.*

John Tomes, F.R.S., M.R.C.S., L.D.S. Eng., *Chairman of Representative Board.*

Thomas Underwood, L.D.S. Eng., *Vice-President.*

A. J. Woodhouse, L.D.S. Eng., *Vice-Chairman of Representative Board.*

James Parkinson, L.D.S. Eng., *Treasurer.*

J. Smith Turner, M.R.C.S., L.D.S. Eng., *Hon. Sec.*

LIST OF MEMBERS OF THE REPRESENTATIVE BOARD.

For London.

Edwin Saunders, F.R.C.S. Eng.
A. Coleman, F.R.C.S., L.D.S. Eng.
C. D. Roberts, L.D.S. Eng.
J. Oakley Coles, L.D.S. Eng.
C. S. Tomes, F.R.S., M.A. (Oxon.),
M.R.C.S., L.D.S. Eng.
T. A. Rogers, M.R.C.S., L.D.S. Eng.
Fred. Canton, M.R.C.S., L.D.S. Eng.
C. Vasey, L.F.P.S., L.D.S. Eng.

Henry Sewill, M.R.C.S., L.D.S. Eng.
Ashley Gibbings, M.R.C.S., L.D.S.
Eng.
W. H. Woodhouse, L.D.S.I.
S. J. Hutchinson, M.R.C.S., L.D.S.
Eng.
Alfred Hill, L.D.S. Eng.
David Hepburn, L.D.S. Eng.
G. A. Ibbetson, F.R.C.S., L.D.S. Eng.

For the Provinces.

C. Sims, L.D.S. Eng., Birmingham.
W. Fothergill, L.D.S. Eng., Darling-
ton.
S. Lee Rymer, L.D.S. Eng., Croydon.
R. Rogers, L.D.S.I., Cheltenham.
J. T. Browne-Mason, L.D.S. Eng.,
Exeter.
R. E. Stewart, L.D.S. Eng. }
W. J. Newman, L.D.S.I. } Liver-
W. H. Waite, L.D.S.I. } pool.

J. H. Kyan, L.D.S. Eng., Preston.
T. C. Parson, M.R.C.S., L.D.S. Eng.,
Bristol.
Dr. J. Smith, F.R.C.S. Edin. } Edin-
W. B. Macleod, L.D.S. Edin. } burgh.
C. Spence Bate, F.R.S., L.D.S. Eng.,
Plymouth.
J. Dennant, L.D.S. Eng., Brighton.
G. W. Buchanan, Esq. } Glasgow.
J.R. Brownlie, L.D.S. Eng. }

H. Campion, M.R.C.S. Eng. } Man-
 F. A. Huet, L.D.S.I. } chester.
 J. O'Duffy, L.D.S.I. } Dublin.
 J. H. Longford, L.D.S.I. }
 J. Manton, L.D.S. Eng., Wakefield.
 J. C. Peacock, D.D.S., Scarborough.

S. Wormald, L.D.S.I., Stockport.
 W. Campbell, L.D.S. Eng., Dundee.
 R. White, M.R.C.S., L.D.S. Eng.,
 Norwich.
 T. Mahonie, L.D.S.I., Sheffield.
 W. H. Nicol, L.D.S. Eng., Leeds.

Extract from Bye-Laws.

4. A person who is registered in the Dentists' Register shall be eligible for election as a member of the Association, provided that he be of good character: that he does not conduct his practice by means of the exhibition of Dental specimens, appliances, or apparatus in an open shop, or in a window, or in a show-case exposed to public inspection; or by means of public advertisements, or circulars, describing modes of practice, or patented or secret processes; or by the publication of his scale of professional charges.

5. Any registered Dental practitioner who can subscribe to a declaration (provided by the Association) embodying the preceding Bye-law, and who shall be recommended as eligible by any three members of the Association, may be elected a member by the Representative Board or by a committee appointed for that purpose by that Board.

THE WESTERN BRANCH OF THE BRITISH DENTAL ASSOCIATION.

President.—Richard Rogers, L.D.S.I.

President Elect.—Charles Gaine, M.R.C.S.

Vice-Presidents.

T. Cooke Parson, M.R.C.S., L.D.S. Eng. | George Parkinson, L.D.S. Eng.
 C. Spence Bate, F.R.S., L.D.S. Eng.

Hon. Treasurer.—J. T. Browne-Mason, L.D.S. Eng.

Hon. Sec.—W. V. Moore, L.D.S. Eng., Plymouth.

Council for the year 1882-3.

F. H. Balkwill, L.D.S. Eng., Ply-
 mouth.
 R. S. Coles, L.D.S.I., Plymouth.
 S. Bevan Fox, L.D.S. Eng., Exeter.
 W. H. Fox, L.D.S. Eng., Gloucester.
 Chas. Gaine, M.R.C.S., Bath.
 C. A. Hayman, L.D.S. Eng., Bristol.
 W. Helyar, L.D.S.I., Bristol.
 Wm. Hunt, L.D.S. Eng., Yeovil.
 W. A. Hunt, L.R.C.P., M.R.C.S.,
 Yeovil.
 E. E. Jewers, L.D.S. Eng., Plymouth.
 C. N. King, L.D.S.I., Exeter.

H. A. King, L.D.S.I., Exeter.
 A. G. Levason, L.D.S.I., Hereford.
 H. Mallet, Exeter.
 G. C. McAdam, L.D.S. Eng., Hereford.
 H. B. Mason, L.D.S. Eng., Exeter.
 R. P. Morrison, L.D.S.I., Barnstaple.
 T. W. G. Palmer, L.D.S. Eng., Chelten-
 ham.
 W. M. Parson, L.D.S.I., Bristol.
 G. T. Parkinson, L.D.S. Eng., Bath.
 G. W. Pearman, L.D.S. Eng., Torquay.
 A. Smith, L.D.S.I., Clifton.
 D. Watson, L.D.S. Eng., Torquay.

At the annual meeting held at Cheltenham it was resolved: That the word "Branch" be inserted in the Bye-laws instead of "Association"; and that in Rule 5, "Being a member of the Central Association shall constitute membership of the Branch, and that papers read shall be the property of the British Dental Association for publication."

THE MIDLAND BRANCH OF THE BRITISH DENTAL ASSOCIATION.

President.—R. E. Stewart, L.D.S. Eng., Liverpool.

Vice-President.—W. H. Nicol, L.D.S. Eng., Leeds.

Treasurer.—S. Wormald, L.D.S.I., Stockport.

Hon. Secretary.—W. H. Waite, L.D.S.I., Liverpool.

Council.

H. Campion, M.R.C.S., Manchester.	G. Brunton, Leeds.
J. N. Manton, L.D.S. Eng., Wakefield.	T. Mahonie, L.D.S.I., Sheffield.
Roff King, L.D.S.I., Shrewsbury.	F. Richardson, L.D.S.I., Derby.
T. Murphy, L.D.S.I., Bolton.	D. A. Wormald, L.D.S.I., Bury.
J. Renshaw, L.D.S.I., Rochdale.	J. S. Crapper, L.D.S.I., Hanley.

Composed of Members of the British Dental Association who reside in the Midland and North Western Counties of England and of Associates who can fulfil the conditions laid down in the Bye-laws. The Annual Meeting takes place in April.

Extract from Bye-laws.

2. The Association shall consist of Members and Associates. No one shall be eligible for membership who is not already a member of the British Dental Association. Any registered Practitioner of good character, who does not conduct his practice by means of the exhibition of Dental specimens, appliances, or apparatus in an open shop, or in a window, or in a show-case exposed to public inspection; or by means of public advertisements or circulars describing modes of practice, or patented or secret processes; or by the publication of his professional qualification, or scale of professional charges, may be admitted as an Associate. Associates shall be entitled to all the privileges of the Branch Association, but shall not be entitled to vote, or hold office therein.

3. Any Member of the British Dental Association may be elected a Member of the Branch by the Council of the Branch, at any of their Ordinary Meetings, on his sending a written application for election to the Secretary of the Branch.

4. Any registered Practitioner who can subscribe to the conditions laid down in Bye-law 2, and who shall be recommended as eligible by any three Members or Associates, may be elected an Associate by the Council, on his forwarding the recommendation and his subscription to the Honorary Secretary of the Branch.

THE SCOTTISH BRANCH OF THE BRITISH DENTAL ASSOCIATION.

President.—John Smith, M.D., F.R.C.S. Edin.

Vice-President.—Walter Campbell, L.D.S. Eng., Dundee.

Treasurer.—J. Austin Biggs, Glasgow.

Hon. Sec.—W. Bowman Macleod, L.D.S. Ed., Edinburgh.

Council.

R. Reid, L.D.S. Eng., Edinburgh.	A. Wilson, L.D.S. Ed., Edinburgh.
A. Smyth, Glasgow.	A. Biggs, L.D.S. Ed., Glasgow.
L. Jablonski Platt, Stirling.	P. Crombie, L.D.S. Ed., Aberdeen.
J. Wood, L.D.S., Dumfries.	M. Finlayson, L.D.S. Ed., Edinburgh.

Bye-laws.—The bye-laws are identical with those of the parent Association.

THE EASTERN COUNTIES DENTAL ASSOCIATION.

President.—R. White, L.D.S. Eng., Norwich.

President Elect.—Jno. Fenn Cole, L.D.S. Eng., Ipswich.

Treasurer.—J. B. Bridgman, Norwich.

Hon. Sec.—W. Stringfield, L.D.S.I., Lowestoft.

Council.

John Fenn Cole, L.D.S. Eng., Ipswich.	R. W. White, M.R.C.S., L.D.S. Eng., Norwich.
J. J. Musgrave, L.D.S. Glas., Lincoln.	Alf. Jones, Cambridge.
N. Tracy, L.D.S. Eng., Ipswich.	W. Marsh, L.D.S.I., Colchester.
Geo. Cunningham, D.M.D., Cambridge.	B. W. Harcourt, Norwich.
	Frank Hall, Hertford.

Districts.—Norfolk, Suffolk, Cambridgeshire, Essex, Lincolnshire, Northamptonshire, Huntingdonshire, Bedfordshire, and Hertfordshire.

Bye-laws.

1. Any person registered in the Dentists' Register shall be eligible for election as a member of this Association provided he be of good character, that he does not conduct his practice by means of the exhibition of Dental specimens, appliances, or apparatus in an open shop or in a window, or in a show-case exposed to public inspection; or by means of public advertisements or circulars describing modes of practice, or patented or secret processes; or by the publication of his scale of professional charges; or by the assumption of any title, degree, or diploma not recognised by this Association.

2. Any registered Practitioner, not disqualified by any bye-law, who shall be recommended as eligible by any three members of the Association (one being from personal knowledge) may be elected a member by the Council, the election to be by ballot, three black balls to exclude.

THE STUDENTS' SOCIETY OF THE DENTAL HOSPITAL OF LONDON, LEICESTER SQUARE.

President.—Arthur S. Underwood, M.R.C.S., L.D.S.

Vice-Presidents.

C. E. Truman, M.A., M.R.C.S., L.D.S. | C. Robbins, L.D.S. Eng.

Treasurer.—W. Hern, M.R.C.S., L.D.S.

Secretaries.

F. N. Pedley, M.R.C.S., L.D.S. | Walter Harrison, L.D.S. Eng.

Council.—Messrs. J. McRuo Ackland; C. S. Buckland; H. J. Gould; A. H. Lester; A. Fox; E. Latchmore; G. Hooper; A. C. Woodhouse.

The object of the Society is the consideration of matters generally and specially appertaining to Dentistry. The affairs of the Society are managed by a Council consisting of a President, two Vice-Presidents, Treasurer, two Secretaries, and six other members. The President is chosen from the past Students who have obtained their degree of L.D.S.; the Vice-Presidents from past Students, with or without qualification.

Any gentleman wishing to become a member must be proposed and seconded at one meeting, and be balloted for at the next; one black ball in four to exclude. The entrance-fee for Ordinary members is half-a-crown, and there is an annual subscription of the same amount.

Ordinary meetings are held at 7 p.m. on the second Monday in every month, from October to March inclusive. The annual meeting for the election of officers, and other business, is held in January of each year.

Every member has the power of introducing one visitor, not being a Student of the Hospital or School, to the evening meetings, with the consent of the President. Visitors are allowed to take part in the discussion of the papers and clinical cases.

There is a Library in connection with the Society, the Secretaries discharging the duties of Librarians.

The Council offer a prize, value £3 3s., at the end of each year for the best paper read before the Society during that year.

STUDENTS' SOCIETY OF THE NATIONAL DENTAL HOSPITAL AND COLLEGE.

President.—Harry Rose, L.D.S. Eng.

Vice-Presidents.

Thomas Gaddes, L.D.S. Eng. and Edin.

W. R. Humby, L.D.S. Eng.

Treasurer and Secretary of the Council.—Fred. Bate.

Secretary.—Morgan Hughes (Society).

Council.—Messrs. C. A. C. Batten; G. C. Cabedo, L.D.S.I.; D. M. Humby; A. P. Penrose; A. J. Prager, L.D.S.I.; Chas. Rose.

This Society, which was established March 15th, 1878, was constituted for the encouragement and diffusion of knowledge in Dental Science, and for the promotion of intercourse among its members, and all Students of Dental Science are eligible for Membership. All Candidates for Membership must be approved by the Council before being proposed to the Society for election. The Entrance Fee is 2s. 6d., and the Annual Subscription is 2s. 6d., to be paid in advance. The Ordinary Meetings of the Society are held on the first Friday in each month, from October to March, both exclusive, at 8 p.m. precisely. Each Member may introduce two visitors, not being Students of the Hospital or College, but the same Visitors may not be admitted more than three times during one Session.

To Correspondents.

1. Communications intended for insertion in the ensuing number must be forwarded to the Editor, at the Office, 11, New Burlington Street, London, W. by the 8th and 23rd of the month, and must be duly authenticated by the name and address of the writer.
2. We cannot undertake to return communications unless the necessary postage stamps are forwarded.
3. It is earnestly requested of our correspondents that their communications be written on one side of the sheet only; and we also beg to call particular attention to the importance of a carefully-penned signature and address.
4. All communications relative to subscriptions and advertisements are to be addressed to the Publishers, Messrs. J. and A. Churchill, 11, New Burlington Street, London, W.
3. The Journal will be supplied direct from the office on PREPAYMENT of subscriptions as under:

Twelve Months (post free) 14s. 0d.

Post-office Orders to be made payable at the Regent Street Office, to J. and A. Churchill, 11, New Burlington Street, W. A single number sent on receipt of seven (penny) stamps.

ANSWERS TO CORRESPONDENTS.

- R. C. TEMPLETON.—Abnormal circumstances only to be appreciated by those actually concerned, and so difficult to explain have caused temporary constitutional disturbance.
- J. C. TIPPETT.—Results from congestion. All systems are liable to occasional derangement.

Communications have been received from Messrs. R. C. Templeton, Rutterford, J. C. Tippet, "A Dentist's Pupil," F. J. Marshall, E. H. Denison, W. J. Cheney, B. T. Hutchinson.

BOOKS AND PAPERS RECEIVED.

Prospectus of St. Thomas's Hospital.' 'Prospectus of St. George's Hospital.' 'Prospectus of Mr. T. Cooke's School of Anatomy, Physiology, and Surgery: Classified Examination Questions and Synopses of Demonstrations.' 'Prospectus of the National Dental Hospital.' 'Cape Argus.' 'Dental Record.' 'Glasgow Medical Journal.' 'Prospectus of the Edinburgh Dental Hospital and School.' 'Regulations of Royal College of Surgeons of Edinburgh for Dental Diploma.' 'Regulations of the Royal College of Surgeons in Ireland for Dental Diploma.' 'Ohio State Journal of Dental Science.' 'L'Odontologia.' 'Lancet.' 'Medical Times and Gazette.' 'British Medical Journal.' 'Pharmaceutical Journal.'

British Journal of Dental Science.

No. 353.

LONDON, OCTOBER 2, 1882.

VOL. XXV.

ON THE PROCEEDINGS OF THE LAST FOUR YEARS.

AN ADDRESS DELIVERED AT THE SECOND ANNUAL GENERAL MEETING OF THE BRITISH DENTAL ASSOCIATION, HELD AT LIVERPOOL ON THE 25TH AND 26TH AUGUST, 1882.

By JOHN TOMES, F.R.S., the Retiring President.

(Concluded from page 889.)

UNDER these circumstances we were advised to submit a carefully drawn case, including the opinion of Mr. FitzGerald and Sir Farrar Herschel, to highest attainable legal authorities—to Sir John Holker, Mr. R. S. Wright (who is distinguished amongst lawyers for the value attached to his opinion upon statute law), and Mr. G. A. R. FitzGerald, the draughtsman of our Act.

The result you all know. A perfect concurrence in the opinion of now Lord Justice Bowen, and a refutation on cited grounds of the opinion of Sir Farrar Herschel respecting the meaning of the words of the Act last quoted. This important opinion was placed at the disposal of the Medical Council, accompanied with a strongly expressed hope that the correction of the Register, supported by a preponderance of high legal authority, should be reconsidered and means taken, in case of doubt, to ensure a judicial decision upon the point upon which a difference of opinion existed, July 16th, 1882.

The Executive Committee, July 28th, acknowledges the receipt of our communication, and replied that it rests with us to obtain a judicial decision. We again ask that the question shall be laid before the Council in full session.

At their next meeting, November 11th, 1881, the Committee resolved, "That the several documents and legal opinions in the possession of the Council having reference to registration under the Dentists Act be placed in the hands of Mr. Farrer, the solicitor to the General Council, for the purpose of his further advising the Committee thereon."

So far as we knew no further action was taken until the meeting of the Council, July 5th, 1882, when, after it was resolved to enter the communication of the Association with others in the minutes, Dr. Pitman said, "That, as there were so many new members of the Council present, perhaps it would facilitate business if Dr. Quain, who was thoroughly familiar with the Dental business, would make a brief statement before Mr. Farrer gave his opinion." Dr. Quain, who, although he accepted an executive office under the Act, has from the first regarded it with great and persistent hostility,* said, "I shall have great pleasure in giving a short historical outline of the proceedings of the Council with regard to this Dental business." But the history given by an adverse partisan is not likely to err on the side of correctness, and we do not find Dr. Quain's version of the position an exception to the general rule. Within a few sentences of the beginning of his narrative he says, "We did not vary the words of the schedule, but we added to it, under the advice which came from the Dental Reform Association." The Registrar, on the other hand, in a passage of his report, already quoted, stated that from first to last he had carefully sought and acted upon the advice of the legal adviser (Mr. Ouvry) of the Council, and, in his previous report, October 17th, 1878, already quoted, we find that all the forms used in registration were submitted to Mr. Ouvry, and, with a few suggested modifications, approved by him. These are sadly conflicting statements. Can we discredit the report of the Registrar, who is generally acknowledged to be strictly impartial and exceedingly exact in his statements?

* Executive Committee—The President, Dr. Pitman, Dr. Haldane, Dr. Aquila Smith, Mr. Simon, Dr. Humphry, and Dr. Quain. Dental Committee—The President, Dr. Pitman, Dr. Haldane, Dr. Aquila Smith, Dr. Humphry, and Dr. Quain.

Then Dr. Quain complains of letters sent out by the Association under legal advice suggesting that certain persons should remove their names from the Register, otherwise they would be reported to the Council. With this letter Dr. Quain had no concern, neither has the Council. The Association, incorporated for the purpose of upholding the spirit and provisions of the Dentists Act, was perfectly within its rights in addressing letters to those who it was advised had obtained registration in error. Then he tells the Council that a list of about four hundred persons was sent in, who, we contended, were liable to have their names erased from the Register; that these were submitted to Mr. Ouvry, who, at a cost of £600, investigated their cases. He goes on to say that Mr. Ouvry, being requested to advise the Council on the facts, came provided with the highest opinions he could obtain, namely, those of Sir Farrar Herschel and his juniors. "We were asked," he said, "why we did not go back to the opinions of Mr. Justice Bowen and Mr. FitzGerald? In the first place, Mr. Justice Bowen was on the bench, and we could not go to him again, and, with regard to the opinion he had previously given, he had not an opportunity of advising on the facts. He advised upon the various questions submitted to him on the formation of the Register, but never on the facts." Now, these statements will not bear comparison with those contained in the Council's minutes. The Register was formed October 17th, 1878. Lord Justice Bowen's opinion is dated, according to Mr. Farrer, March 3rd, 1879, when 4725 out of the total, 5289, had been registered. Then, as to the "facts," the main and indeed only important fact known by simple reference to annually published reports was that these persons whose cases were under consideration were not qualified to practise pharmacy, or medicine, or surgery, and whether they were entitled to registration was the question upon which Lord Justice Bowen was consulted by the Council, and Mr. G. A. R. Fitzgerald (October, 1879) by ourselves; upon which Sir Farrar Herschel was consulted (December, 1880) by the Executive Committee, and Lord Justice Holker, in July, 1881, by the Association,

namely, whether the practice of medicine, surgery, and pharmacy recited in the Act means the legal practice of those subjects. The Committee found that according to Lord Justice Bowen and Mr. Fitzgerald the Council had registered something like 400 persons who had no right to registration, and Sir Farrar Herschel absolved them from the difficulty by saying that the subjects named in the Act did not mean the legal practice of those subjects. So much for Dr. Quain's performance as an historian. The minutes of the Council contradict the historical statements upon which the whole force of his advocacy depends. A word more and we shall have done with the historian. Dr. Quain says the Dentists Act was not brought as desired by the Council in an amendment proposed by himself into conformity with the Dental Section of the Lord President's Bill. "The whole force of our amendment was (he says) to place it in the hands of an independent board." The Bill as it came to the Council for its opinion contains a clause empowering the Council to submit to the Privy Council a scheme for the examination, licensing, and registration of Dentists under the control of the Medical Council. This was objected to in a resolution to the following effect:—"That it is not desirable that the Medical Council should be required to undertake to originate a new scheme of examination rules, Section 1 of Clause 23, but that it should be entrusted with such supervisory power as regards the educational details from time to time proposed by the medical authorities authorised in the Duke of Richmond's Bill, as it already exercises with regard to other examinations." The Government accepted this suggested amendment, and drew the amendments which were made part of the Dentists Act in conformity thereto. The minutes of the Council (April 13th, 1878) contain a complete refutation of the allegation that the Government did not bring the Dentists Act in conformity with the Dental Section of the Lord President's Bill as amended by the Medical Council.

Mr. Farrer, in continuing the history commenced by Dr. Quain, said he had referred the opinion of Lord Justice Holker and his coadjutors, with the whole of the facts, to

Sir Farrar Herschel for his reconsideration. It was elicited from him that he had not included in the reference the opinion of Lord Justice Bowen, alleging as a reason for not doing so that "it was an opinion taken before the Register was formed and with a view to the formation of the Register."

Mr. Farrer is the successor of the late Mr. Ouvry, and probably was not intimately acquainted with what took place in 1879, otherwise he would not have made this statement. He, however, admits that the bearing of Lord Justice Bowen's opinion is in the same direction as that of Sir John Holker's, which we know embraces the same points, and is directly at variance with that given by Sir Farrar Herschel. Wholly disregarding Lord Justice Bowen's taken by the Council, "It will," he says, "be impossible for you to act upon the opinions taken adversely to those of your own legal advisers." "Under these circumstances, I do not think the Council can or ought to take any other course than that of following the advice contained in the opinion I have read."

Dr. Storrar, in a short but able speech, moved that the several opinions, four in number, be placed in the minutes. "Do let us see these opinions, do not put blinkers upon us, and ask us simply to follow Mr. Farrer," he said.

Mr. Farrer, in reply, again urged that Lord Justice Bowen's opinion was taken on the formation of the Register, and said, "The question here is whether you shall erase names already on the Register," and pointed out the consequence, if beaten in an action for the restoration of an erased name, leaving in the mind of the reader the impression that he thought erasure would follow the passing of Dr. Storrar's motion.

Dr. Quain, in speaking to Dr. Storrar's motion, said, "One of the most prominent questions that have been discussed to-day is why Mr. Justice Bowen's opinion was not printed and published; but it was acted upon, and, in fact, it is this opinion, joined with Mr. FitzGerald's, that has led us into all this trouble." But it could not be so, for Mr. Justice Bowen's opinion was taken after the Register was fully formed. Two months after, it was decided to use the

terms "with pharmacy" in the Register, and Mr. Fitzgerald's eight months later, and after the Register was in print. The evidence goes to show that the neglect of these opinions led to all this trouble.

Sir William Gull argued that, the names having got on the Register, it was inexpedient to remove them. After much irrelevant speaking, Dr. Storrar's motion was lost. The President, during the discussion, urged the adoption of Mr. Farrer's advice, and said, "Those who thought the Council had been in the wrong should attack the Council." The Council, in fact, sought protection under the wing of its legal adviser rather than exercise the judicial function with which the Act endowed it, and, in declining to publish the opinions, declined also to enter judicially upon the consideration of the correction of the Register. I will terminate this historical sketch by an extract from the speech of the Rev. Dr. Haughton, on his introducing a motion on the last day of the session, to the effect "That the proceedings of the Council with regard to correcting the Dentists' Register has been at variance with the opinion of Mr. Justice Bowen." Having seen the very careful opinion of Mr. Justice Bowen, and knowing the high esteem in which that gentleman stood amongst his professional brethren, he (Dr. Haughton) thought it a very serious thing for the Executive Committee to depart from his explicit and distinct advice." More need not be quoted, as the speech will be found in the August number of our journal.

I have endeavoured to place before the Association the essential facts bearing upon our contention that the Register requires correction with the proofs upon which those facts rest, and I have done so as succinctly as the subject would allow consistently with the exposure of the great and numerous misrepresentations and misapprehensions that have obtained currency upon this troubled subject.

It remains for the Association to decide whether, under the circumstances described, any, and if any, what further steps should be taken for the furtherance of a correction of the Register admitted to be incorrect. In this connection it must be borne in mind that the Dentists Act, notwith-

standing the hostility of Dr. Quain, has, on the whole, been administered by the Council with great success, and with great advantage both to the public and to the Dental profession. The partial failure has been limited to a matter of secondary, though great, importance, and is due to the legally ordered want of care in the admission of a certain class of persons to the Register.

Registration was commenced in the true letter and spirit of the Act. Those who combined callings other than those specified in the Act with the practice of Dentistry were refused registration, but the Chemists' and Druggists' Register was not referred to, in order to make sure that those who claimed to practise Dentistry with pharmacy were entitled to practise pharmacy. In the absence of this precaution the four hundred crept in. But the evil had been done before Mr. (now Lord Justice) Bowen was consulted. The numerical magnitude of the evil was not known till after the publication of the initial Register and the list subsequently sent in by the Association.

Sir Farrar Herschell was brought to the rescue, and provided the Council with the opportunity of inaction. The duty of pointing out what we believe to be great errors in registration has been discharged by the Association. The duty of correction lies wholly with the Medical Council.

The tone of regret must now be changed for one of congratulation.

The question of the registration of additional qualifications was settled satisfactorily, so soon as the Council on this question accepted and acted upon its judicial functions, and disregarded the counsel of those who could not be competent to advise. A farther and higher important exercise of the judicial functions of the Council was effected in the condemnation of practising under a false name, as being both illegal and unprofessional.

The last subject I have to mention is the report of the Royal Commission on Medical Bills. The President of the Association was called upon to give evidence before the Commission, and the opportunity of claiming representation on the Medical Council was put forward. Not, however,

with the expectation of success, for it was known that general opinion favoured a reduction in the number of members. Another party sought to deprive the licentiate in Dental Surgery of his right to use the title of Dental Surgeon, but this was altogether unsuccessful.

The report of the Commissioner is published, but the evidence has not yet been issued; until this is published it would be premature to enter upon a discussion of the merits either of the evidence given or the report thereon. A general review of the past year gives ample proof of prosperity and success, but on leaving the presidential chair I desire to call the attention of the Association to the too obvious fact that there are hostile influences which it will be the duty of the President and Representative Board to carefully watch and if need be to antagonise.

This watchfulness will be especially necessary when the promised Medical Bill comes before Parliament; of all our enemies, however, the one we have most to fear is apathy in our own ranks.

It remains for me now on leaving the chair to express my sincere thanks to the Association, to the Representative Board, and especially to the Hon. Secretary, Mr. Smith Turner, for the active and cordial support rendered to the President during his past year of office.

THE PRESIDENT'S (MR. H. CAMPION) ADDRESS TO THE
LIVERPOOL MEETING OF THE BRITISH DENTAL
ASSOCIATION, AUGUST 25TH, 1882.

IN offering a hearty welcome to the members of the British Dental Association from its Midland Branch, and more especially from its Liverpool members, I must not forget, gentlemen, to express my full appreciation of the honour you have done me in placing me in the proud position in which I now find myself as President of our Association for the coming year.

I well remember when at school hearing one of the junior boys translate the Latin phrase *Necessitas non habet leges* as "Necessity has no legs." If he was moralising on the misfortune of being unable to run away from the stern necessity which obliged him to try and master what seemed to him a difficult task, I can fully sympathise with his feelings; and since my legs have failed to relieve me from the necessity of appearing before you in my present responsible position, it only remains for me to crave your kind indulgence during my term of office, and to assure you that my failings, which I fear will be many, will not be from the want of a strong desire and an earnest effort on my part to assist to the best of my ability in carrying out the objects for which our Association was formed. I must, however, confess that were it not for the kind consideration and assistance that past friendly intercourse assures me I shall at all times receive from those with whom I shall be associated, my heart would indeed fail me when I consider the responsibilities of the position, and the utter impossibility of my being able, with anything like satisfaction to you or to myself, to follow in the footsteps of him who has so recently vacated this chair. Vain, indeed, would it be for me to imagine that anything I may say can increase the respect and kind regard which I am sure you all feel for our late worthy President, Mr. Tomes. From the time of our earliest recollections, his name has ever been associated with efforts for the recognition of our branch of surgery by the College of Surgeons, and with every other movement for the elevation and good of our profession, and I am sure you all will unite with me not only in expressing our disappointment at his absence from our meeting to-day, but also the great regret we feel at the cause which has prevented him from joining us, and our sincere sympathy with him in his present anxiety, and also join in the hope that he himself may be spared to us for many years to come, and be permitted to see, in the rising generation that surrounds him, the good fruit which is slowly but surely being matured by the success of those schemes to which he has so nobly and earnestly devoted his energies during a long and active life.

As his able and interesting paper, which you have just heard, contains all there is to be told you about the present of our Association, it has been suggested that I should say a few words to you respecting the future. It would be easy and interesting to draw up an ideal scheme for our future guidance, and picture in glowing colours the success which we all hope is in store for us, but such a course would not be very profitable, and I will, therefore, confine my remarks to a few practical points which I think it will be well for us to keep in mind, and, knowing the amount of work there is before us, I will not detain you long.

I have heard it recently asked more than once whether our meeting for the reading and discussion of papers on scientific subjects is in accordance with the objects for which our Association was formed, and whether many of our early members did not join on the understanding that this was to be (if I may so use the word) solely a political, and not a scientific society.

On referring to our Articles of Association, I cannot see that a meeting such as we are holding here to-day is in any way contrary to the objects for which the Association was established, which we are there told was for the promotion of Dental and the allied sciences, the maintenance of the honour and interests of the Dental profession by periodical meetings, the publication of a journal, and occasionally of transactions and other papers, the formation of a benevolent fund, the maintenance of the spirit and provisions of the Dentists Act, and other things incidental or conducive to the attainment of the above objects.

We cannot for a moment imagine that "periodical meetings of the members of the Association and of the Dental profession generally in different parts of the country," as mentioned in our Articles of Association, would prove sufficient in themselves to command the interest and support of the members of the profession throughout the provinces if the transactions of those meetings were to be confined solely to the routine business of the Association. We can well understand the founders and supporters of the Odontological Society looking with an anxious eye on anything that seemed likely to pro-

voke an opposition to, or interfere with, the well-being of that society, but I am sure you will all now agree with me that there is room enough for both societies, and that each has its own independent sphere for action without necessarily intruding on the province of the other.

Man is essentially a social animal. We are social in everything we do. We associate for the purposes of business, of amusement, and pleasure, and sad experience teaches us that men will only too often associate for evil if they are not already associated for good. If such be the tendency of human nature, it surely would be a great mistake not to endeavour to utilise it for the purpose of promoting a cordial understanding and kindly feeling amongst the scattered members of our profession. Nor is this all the good that may be anticipated from meetings such as we are holding here to-day, for, as we are told by the distinguished President of the late International Congress, "from the interchange of ideas which naturally results from the bringing together men of all kinds of mental power, knowledge, and skill, ready alike to acquire and to impart knowledge, knowledge itself must be increased." Since, then, the benefits to be derived from association are so many and so great, surely they ought not to be confined to those whose privilege it is to be within reach of our great metropolis, but, if possible, they should be extended to all the members of our profession throughout the country, and, as the Odontological Society is unable to meet these requirements, we cannot be said to be intruding on its province by meeting as we are to-day for the purpose of supplying that element of social and professional intercourse so essential to the well-being and to the further development of our profession, which neither that nor any other existing society is able to promote.

For the furtherance of this important object I think one of our first efforts should be to make our meetings as attractive as possible, in the hope that all the members of our profession in the immediate district in which our meetings are held will thereby be ultimately induced to join the Association. The arrangements for our present meeting seems to me to coincide most fully with this idea, as we have

provided for us set papers on Dental Surgery, Pathology, and Mechanics, and other communications, which it is hoped will be productive of interesting and instructive discussion. There will also be, I am glad to say, a series of clinics, or rather operative demonstrations, which have only recently been attempted in this country, and which I am sure will prove both interesting and instructive.

The value of these has long been known in America, and the good results to be derived from them were fully illustrated at the London Dental Hospital, at the late meeting of the International Medical Congress, where not only did some of our American brethren kindly show how readily they could operate in public for the benefit of those who were anxious to learn, but many also of our own members proved that they were fully equal to taking their share in this useful and instructive portion of our meeting, thus showing that we have amongst us the material, and that it only wants to be developed to render it one of the most instructive and interesting portions of our annual gathering.

Another important element is the Branches, which promise to become such useful portions of our Association that they deserve universal support and encouragement, and it is therefore gratifying to know that they are increasing in number. What I have just said of the benefits to be derived from our annual meetings applies with equal or even greater force to them. Not only do they give more opportunities for the reading and discussion of papers, which must necessarily be limited, at the Annual Meetings of the Association, but they offer facilities for many of our younger members to give us the benefit of their experience, who, probably from timidity or other causes, would be unwilling to come forward in a large meeting such as the present one, and thus we may hope to encourage and bring to the front many who, without these opportunities, would be lost to the Association, but who, by this means, may ultimately be made some of our most useful working members. Here, if I may venture to do so, I should like to drop a friendly caution. Experience teaches us that the tendency of all similar societies has been to become, as time goes on, more and more elaborate, and

necessarily more expensive, in their social element without any corresponding increase in their utility.

Fancying that I can trace the shadows of the coming event, I take this opportunity, when some members of all our Branches are probably present, to venture to suggest that, as our Association will for the future meet annually in the provinces, and all its members will then have an opportunity of joining in the larger and social gathering, whether it might not be desirable to discontinue the *formal* dinner after the Branch Meeting, or defer it to every second or third year, so that those who are anxious to do so may be able to return home after the business of the meeting is concluded without the feeling that by so doing they are causing disappointment to their friends, it still of course being open to any who like to do so, to meet socially but in an *informal* manner. All such arrangements must, however, be regulated by local and other influences ; but in whichever direction they may tend, I feel certain I may venture to urge on each individual member the desirability of supporting the Branch in his own district, as, by so doing, I believe that he will be assisting greatly in forwarding the objects of the Association, and let us hope that the Branches will continue to increase in number, with additional benefit to the individual members, and also to the Association at large.

In considering the future we must not forget that that future will in a great measure be built on the present, as the present has derived its origin from what has preceded it. We, at the present time, are appropriating and enjoying the benefits derived from the labours of those who have gone before us, and since we are unable in any way to repay them for the privileges we have derived from them, let us at least in our turn endeavour to leave those who will follow us as our debtors in the same manner as we feel ourselves indebted to those from whom we have derived our present advantages.

For the attainment of this object let each one patiently and thoughtfully employ his best energies in that line of research for which he feels himself best suited ; and, ever remembering the Platonic dictum that opinion is only midway between knowledge and ignorance, let him then search for the truth

—ever one of the noblest occupations of the human mind—reflect, and record his observations accurately, thus endeavouring to add to the general store of facts; for it is by the accumulation of facts that all true scientific knowledge is increased. The deductions which we draw from them, and which now appear to us to be the truth, may, as time goes on, be superseded by others more nearly approximate to the truth itself, but the facts will ever remain the same, and will not only be of present value, but will be a living power, the influence of which will extend to future generations.

The subject of the Register and the Dentists Act will be brought before your notice by others who are more conversant with their present working than I am. Much as we must all regret the present state of our Register, we have the comfort of knowing that time will amend it in spite of the authorities, if they are unwilling to concede to us what is only an act of bare justice; and let us be encouraged by the knowledge that the future benefit to the profession will more than compensate for the difficulties and disagreeables of the present time. The fact of his name being on the Register, or his being able to write L.D.S. after it, will not place an uneducated man on an equality with an educated one, or give him a practice, or make a gentlemen of him, or teach him to be kind and gentle and courteous to his patients.

I once heard the initial letters of an honorary degree following a name very happily compared to the figure 0 amongst the numerals, which when placed in an unduly prominent position before another figure makes no addition to its value, but when, in its proper subordinate position behind, it adds tenfold to the value of the figure that precedes it. And let us not deceive ourselves and expect too much from the Act, which although it gives us certain privileges, such as exemption from serving on juries, &c., was designed as much or even more for the protection of the public than for the benefit of the profession.

It can only guarantee to the public the certainty that any one who professes by its authority to be a qualified practitioner has acquired such an amount of professional knowledge

as was sufficient to enable him to pass an examination, the standard of which is the minimum amount of knowledge that is considered necessary to qualify him for the practice of his profession. And let no one suppose that his education must end there, for even then there is much to be learned that can only be acquired by laborious voluntary efforts; and to the attainment of these ends our Association can contribute in no small degree, not only by what is to be gained by the mutual interchange of ideas and experience, but also by the *moral* influence which the general consensus of opinion can exercise in the support of all the more noble and honorable principles of action, as well as by the discouragement of all such acts as would tend to lower the moral status of our profession.

The papers that will be read to-day will treat of subjects having an important influence on the health of the community. Dentistry, in its three principal divisions of Surgery, Pathology and Mechanics, and on our more or less accurate knowledge of them, will greatly depend on the amount of good we are able to confer on suffering fellow-creatures, and the comfort and success with which we practise our profession. True it is that our attention being directed to one branch of surgery only, the ground we have to go over is to a certain extent limited, but this, far from being a drawback, should lead to a greater concentration of ideas and a more perfect investigation of the various phenomena that are brought under our notice.

But I must not forget my promise, gentlemen, and I will, therefore, in conclusion only remark that, as our present meeting will possibly be referred to as a precedent, and will probably be a guide for the management of our next, a year hence, let us therefore watch its results carefully, and endeavour to judge it fairly and kindly, remembering that, as it is the first meeting of our Association in the provinces, the knowledge that may generally be derived from past experience is in the present case unavailable, and that those who have been the chief instruments in perfecting the arrangement of its details have had, therefore, to rely in a great measure on their own initiative powers, but I believe I may

safely say the work has been to them a pleasure, which will be increased tenfold if it should in any way add to the enjoyment of those members who are now present, and conduce in any slight degree to the well-being of our Association, and to the furtherance of those objects for the which it was established.

AMALGAMS.

By E. GREGORY, M.D., D.D.S., L.D.S.

IN the 'Cosmos' for August last, Dr. Bonwell, of Philadelphia, U.S., gives an elaborate description of his amalgam and how to mix it, and at p. 424 he states, "*The treatment of gold with mercury is, I believe, new.*" I beg respectfully to inform him, through the medium of your Journal, it is not new, as the following formula, published in the 'Pharmaceutical Journal,' March 1st, 1850, vol. ix, p. 404, will show.

"*An amalgam for stopping teeth.*—Chloride of silver is prepared by precipitation from the nitrate by adding common salt; a pasty deposit immediately takes place, and when all the silver is thrown down (which is thrown by the addition of a few drops of hydrochloric acid, not rendering the fluid turbid), it should be washed and drained so as to leave a pasty mass. Into this a piece of zinc is immersed. In the course of two or three days (according to the quantity submitted), all the silver will be reduced to the metallic state; you then remove the zinc. To ascertain the weight of silver you have to amalgamate, it is necessary to weigh the piece of zinc before submitting it to the paste, and the loss of weight which the zinc sustains will be equivalent to the weight of metallic silver produced. To this may be added six or eight times its weight of mercury, which must be triturated in a mortar with warm water, for several hours, or so long as the mass continues in the least to discolour the water. The operator will discover the pasty adhesiveness

which the amalgam will acquire as he proceeds, and for this part of the process it is better to have an excess of mercury, which can be squeezed out, and should leave at the conclusion of the operation an amalgam composed of one part of silver and four parts of mercury. This amalgam of silver is to be united with an amalgam of gold.

“The amalgam of gold may be prepared by putting ribbons of pure gold (similar in thickness to that which gold beaters commence beating with) into heated or nearly boiling pure mercury, and in the proportion of four mercury to one gold. This may be poured into a mortar containing water, and washed, as the silver amalgam, so long as the least discoloration appears in the water. This should be freed of its superfluous mercury, and the mass should consist of gold one part, mercury three parts.

“The amalgams being now perfectly pure, it may be well to keep in separate boxes the little pellets necessary for combination of the compounds, and the proportions are two parts by weight of the gold amalgam to one of the silver. It is found to become a more compact mass by the first crystallisation, although, should there be any residue, it may be heated, and rubbed up again with a fresh supply for a future operation.

“The two pellets had better be triturated thoroughly in a mortar before the compound is submitted to the flame of a spirit lamp, and for the better incorporation, it is necessary to submit it to heating and trituration in the usual way three or four times.”

Therefore, the addition of gold to mercury for amalgams was known to the Dental profession thirty-two years ago.

ON PLASTER IMPRESSION TAKING.

By EUGENE C. CLARKE, L.D.S.I., Bangor.

Plaster of Paris.—Mistaken notions exist as to the difficulties attending the use of plaster of Paris as a material for

taking impressions. With a little practice it is quite as easy to use as anything else, and infinitely more certain in its results ; that used for taking impressions of the mouth should be of the best description. For plaster impressions in ordinary full cases, upper or lower, select a Britannia cup about one-eighth of an inch larger than the alveolar ridge, take the impression as usual with composition or wax ; when taken enlarge by pressure or cutting out the depressions formed by the teeth or a prominent alveolar ridge, and lastly, pour in a thin layer of plaster and replace the impression. The great secret of saving your patient any discomfort is to have just the right quantity of plaster in the cup to suit the case. It is always advisable in mixing the plaster to add a little salt or sulphate of potash to quicken the setting.

Place the patient in an ordinary chair, and after the cup is introduced incline the head forward, pressing the cup well back in the mouth before you let it touch the teeth ; after this, bring the free border of the back of the tray into contact with the posterior part of the palate, and then press upwards, if an upper is being taken, from behind forwards, until the whole tray embraces the dental arch. Adopting this plan secures two points, you prevent the plaster running backwards and falling on the base of the tongue so as to produce retching, and also bring the overplus to the front of the mouth while it is visible, and therefore more manageable.

The hardness of the plaster can be ascertained by testing the portion that remains in the bowl. As soon as it breaks with a sharp fracture it should be removed ; to keep it much longer than this is apt to give unnecessary pain in removal owing to the absorbing properties of the hardened plaster, which causes it to cling with great tenacity to the mucous membrane. Where there are one or two teeth remaining in the arch it is advisable to surround them with a collar of composition before taking the impression ; you can then oil the collars, and when the impression is taken they can be removed carefully and placed in their places. By this method I have been able to secure very clear impressions of narrow-necked teeth. It should always be left for about an hour before

it is ready for casting; the surface should then be well coated with a dilute soap mixture; ordinary soap with rain water will answer the purpose very well. I generally colour the water with a little cochineal. I have then the opportunity of seeing the division in separating so much better.

In removing the cup from the model it should be immersed in hot water to soften the composition lining the cup. With a small riveting hammer and a fine chisel, I proceed to remove the plaster by gradual chipping, which is a very easy matter, providing the precautions which I have before enumerated are taken.

Reflections from the Surgery.

EPILEPSY AND DENTAL SURGERY.

Cases reported by F. HENRI WEISS, L.D.S. Eng.,
DENTAL SURGEON TO THE NATIONAL DENTAL HOSPITAL.

J. H—, æt. 31, male, applied at the National Dental Hospital on August 21st, 1882, to have some teeth removed which had caused him considerable pain.

The senior dresser decided to extract the roots of the second lower molar and wisdom tooth of the right side, when the patient requested to have nitrous oxide gas administered.

I was making the usual inquiries as to health and ascertaining the condition of the pulse when I noticed the man did not appear to heed what I said, the head rolled to the right side, the eyes opened widely, and the pupils immediately dilated to their full extent. This was followed by five or six violent twitchings of the right side, the radial pulse became quite imperceptible, and the hands cold and clammy.

The addition of syncope to epilepsy, a somewhat rare oc-

currence, called for immediate treatment, and I was about to administer remedies, when the pupils contracted and consciousness returned. The excessive exhaustion which followed was relieved by Sp. Ammon. Arom. $\mathfrak{m}\mathfrak{x}\mathfrak{l}$. The history he gave, was that he had been in the Merchant Service and had led a very irregular life. Two months ago he joined the Salvation Army, and had also become a total abstainer; he had never suffered with fits, but was frequently attacked with giddiness, his bodily strength was fast giving way, and the pain he was enduring with his teeth rendered his condition even more deplorable. I recommended him to have the teeth extracted and to attend the University College Hospital for his general health, but his determination to have nitrous oxide gas for the operation compelled me to decline to administer it until he was stronger.

P. K—, æt. 20, male, consulted me to ascertain whether the condition of his teeth had anything to do with the epileptic fits he was suffering with. A careful examination proved the mouth to be in a fairly healthy state, but I determined to remove two molars which were extensively decayed. I was at first reluctant to comply with his wish to have nitrous oxide gas administered, but being anxious to relieve him from all dental irritation, and failing to persuade him to undergo the operation without the gas, I decided to administer, and anæsthesia was established with six gallons. The teeth were extracted, and a few seconds after the face became purple, the veins distended, eyes turned upwards, respiration ceased, and the body violently convulsed. I pulled the tongue forward, gagged the mouth with an elevator, and protected him from injury. Respiration returned, and in about fifteen seconds consciousness was restored. He was highly delighted with the influence of the gas, and did not complain of the least unpleasant symptom.

It may be doubted whether true epilepsy existed in this case; and the symptoms carefully considered may lead to the conclusion that asphyxia was the complication.

When the patient was considered insensible there was paralysis of the fifth nerve, shown by the eyeball and palpebræ being touched without signs of pain, the third nerve

by the pupil being dilated, and the spinal nerves by the arms dropping when raised, the face assumed the usual dusky hue, and the breathing was short and irregular. The operation was performed under these conditions, and when waiting for consciousness to return the other symptoms came on. There was no sudden gasp when the tongue was pulled forward, nor do I think there was any blood in the throat; as the teeth removed were the first permanent molars of the lower jaw and the head was upright; there was nothing round the neck to cause obstruction. The respiration had certainly ceased, and the purple skin and distended veins pointed more to influence on the circulation. Whether the gas had seriously attacked the respiratory nervous centres, the heart, or epilepsy was rife, I will leave my readers to decide.

The British Journal of Dental Science.

NEW PUBLISHING ARRANGEMENTS.

NOTICE.

ON and after the 16th instant this Journal will be published at the 'British Journal of Dental Science' Office, 82, Mortimer Street, Regent Street, London, W., where it is requested all communications may be sent, and where every arrangement for advertisements, &c., can be made.

The Journal will as heretofore be supplied by the Dental Depôts or direct from the Office.

As all changes are liable to disconcert previous routine, it is earnestly requested that any subscriber who may not receive his copy to date will immediately inform the publisher in order that the error may be rectified and punctuality secured.

British Journal of Dental Science.

LONDON, OCTOBER 2, 1882.

IN another column will be found the conclusion of Mr. Tomes's clear and succinct valedictory address to the British Dental Association, and the profession are much indebted to him for the pains he has taken to explain in a few words those events of vital importance to us that have transpired during the last four years.

True it is that registration and the revision of the Dental Register form the chief subjects of the address. With the conflicting legal opinions brought forward we are not surprised at the time that has been taken up at the meetings of the General Medical Council. It has been our policy to support the Dental Register as it originally appeared, and we fail to see if any benefit will be derived by further controversy.

The Dentists Act was drafted with all the care the human mind could bestow, but like most legislative measures it has its weak points. The one which has caused the most trouble is the want of the proper definition of a *bonâ fide* Dentist. Section 6 gives the qualifications necessary for registration, and we purpose dealing with them *seriatim*.

First: "*Any person who is a licentiate in Dental Surgery or Dentistry of any of the medical authorities.*" A person who has devoted the time required, and by examination proves he possesses the knowledge necessary to obtain the Dental licence, is in every sense qualified. It has been our pleasure to know a gentleman belonging to the Indian Medical Staff who has obtained the L.D.S. Eng. for the sole purpose of treating diseases of the teeth in a medical capacity, but he has, we think, no intention to drop his military title for that of Dentist.

The second division deals with foreign and colonial registration, and the points for discussion are so identical with the third that we can immediately pass to it.

"Any one who is at the passing of this Act bonâ fide engaged in the practice of Dentistry or Dental Surgery, either separately or in conjunction with the practice of medicine, surgery, or pharmacy." Such is the wording of the Act, and on this division nearly the whole of the conflict with the General Medical Council has taken place. *Bonâ fide*, in the general acceptation of the phrase, signifies, in good faith, in reality, truly, &c. By this reading amateurs, such as hairdressers, perfumers, jewellers, and chemists, have placed their names on the Register, and it has been proved that their names cannot be removed;—they have ventured their knowledge of Dental Surgery as a qualification and ignored the remaining words of the division, namely, "in conjunction with medicine, surgery, or pharmacy." Was it the idea of the promoters of the Act that in practising Dentistry a certain amount of medicine, surgery, and pharmacology, would necessarily be known—that those avocations were the only ones fitted to be followed in conjunction with Dentistry? Were they inserted as the only known combinations with Dentistry? or were they considered members of the same family, and as such, the only recognisable avocations with which Dentistry could be associated, if any combination of businesses existed?

It was well known that Dentistry was practised with hair-dressing at the time the Act was drafted, and with that knowledge, if such a combination was considered undesirable, the wording of Section 6 should have been more clear.

Another complication is obvious. Take, for instance, an aged chemist whose name is on the Chemists' and Druggists' Register. His practice in Dental Surgery may be great, so far as extractions go, not that he performs the operations himself, all is done by his assistant. What is this assistant? Is he the young man who, with Dental skill (prior to legislation), is debarred the privilege of being on the Dentists' Register because he is an assistant to a chemist and is not registered? By the wording of the Act he can ignore his

association with pharmacy, because he is not registered as a chemist, and by his practice, say of 500 extractions per annum, claim a place on the Dental Register.

The mention of being "in conjunction" can have but one meaning, that the individual carries on two businesses instead of one, the merits or demerits of which need not to be commented upon here. The Act required that a man was a Dentist at a stated time, and his association with any other calling was unnecessary, and we may say inquisitorial.

Additional titles being placed with the name gives the inquirer the educational status the practitioner holds, whether in his profession or otherwise, and is a great inducement for study; but so far as the legal position of the Register is concerned, it only gives proof that an individual whose name appears can recover fees for work done under the title of Dentist and its synonyms. When the public can discriminate between good and bad Dental work, and when our educational establishments insist upon none but those who possess a most thorough knowledge of their profession obtaining their degree, will the fruits of legislation be found.

Some disappointment is felt by the Representative Board of the British Dental Association that the list of names sent in were not swept off the Register, but we cannot join in sympathy for the reasons stated above. The names of those who have laboured in this giant work of Dental reform will become household words to future generations, and well they should, for although their idol is not shining with that splendour they would wish, its outlines are defined and it is for the younger members of the profession to do the rest.

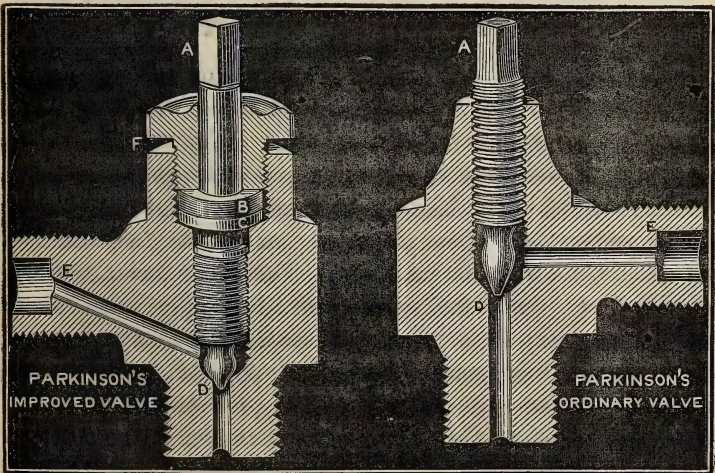
WE tender our apologies to Mr. Frank Hall, of Hertford, for not having added the qualification of L.D.S. Irel. to his name in our notice of the meeting of the Eastern Counties Dental Association.

Manipulative Miscellany.

All instruments or articles wished to be described under this heading are requested to be sent *for inspection* to the publishers not later than the 8th and 23rd of each month, they can be returned in a few days. Where, from the size or otherwise, this is impracticable, a clear and minute description will be sufficient; the sole object being to give practitioners a description of everything new, on its own merits, and without any intention or wish to pit one against another. All makers, vendors, and inventors, are invited, with strict impartiality, to contribute towards this end.

NEW SCREW TAP FOR THE NITROUS OXIDE GAS BOTTLE.

MR. J. H. PARKINSON has introduced a new screw tap for the nitrous-oxide gas bottle. He claims as improvements upon the original pattern two features: ease with which it may be turned at all times, and security against the escape of gas.



A, spindle; B, leather washer; C, metal collar; D, tube leading to bottle;
E, exit tube; F, packing box.

An examination of the accompanying illustration will show

its construction; by the packing box through which the spindle passes, the composition of resin, which was always necessary to prevent an escape of gas at so high a pressure, round the thread of the screw is done away with. It is the common experience of all using liquid gas to find the tap to stick, and being released with a jerk frequently leads to a very unpleasant disarrangement of one's apparatus.

A NEW DROP BOTTLE.

A DROP bottle of simple construction has been invented by Mr. Thos. Rodway, of Hull, and is offered to the profession by Messrs. Smale Brothers. It consists of an ordinary half-ounce glass bottle, and from an eighth of an inch from the inferior margin a glass tube rises, forming the letter **S**. An india-rubber ball is attached to the hollow stopper, which, being full of air, when pressed forces the liquid in the bottle up the tube and, with great regularity, expels a drop. The uses to which this little contrivance may be put to are obvious.

NEW TEETH FOR CLOSE BITES.

We have received some samples of new molar and bicuspid teeth brought out by Messrs. Ash and Sons which we can safely recommend to the profession. They are especially adapted for close bites, and the material strength of pins and finish are equal to the best productions from that firm.

Two patterns are brought under our notice, the one for metal and the other for vulcanite. Those for metal may be described as stout face teeth with the upper and lower borders bevelled off, so that less than an eighth of an inch is left between the opposing jaws. The vulcanite teeth consist of perfect crowns with the pins closely placed so as to obtain the greatest hold on the vulcanite with the least possible intrusion on space.

ERRATUM.—In our issue of September 1st we noticed Mr. Jamieson's "Eclipse Platinum Amalgam." It should have read the "Improved Eclipse Platinum Amalgam."

Literary Notices and Selections.

DEATHS FROM CHLOROFORM.

A FATAL case from the administration of chloroform was recently investigated by Mr. W. J. Payne at Guy's Hospital. The deceased, a man aged 36, was employed by a firm of engineers in Southwark Bridge Road. Whilst cleaning the machine at which he worked, he got his left thumb jammed between the cogs. A fellow-workman deposed that he stopped the machine, and took the deceased to Guy's Hospital. The house-surgeon, who attended to the man, said the thumb must come off, and advised the administration of chloroform. Witness remained whilst it was administered, but saw no one examine deceased's heart to see if he could bear it. The man struggled very much at first, and then became as if dead. The house-surgeon is reported to have deposed that the left thumb of the deceased was completely shattered by the machine, and the bone was broken in six places. He advised the administration of chloroform before the operation, and the deceased assented. He asked no question of the deceased as to his health, nor was the heart examined; but, judging from the pulse, he thought the deceased had no organic disease. While giving chloroform with the inhaler, on which he had put three separate doses of thirty drops of chloroform, the deceased showed symptoms which necessitated restorative measures being used. Upon the patient coming to, he (witness) told the dresser, who was to operate, to proceed as rapidly as possible, as he could not administer chloroform again; but just as the operation was commenced the pulse failed, the heart ceased to beat, and the man was dead. The post-mortem examination showed that death was due to chloroform acting upon a fatty heart. Witness had had a great deal of experience in administering chloroform; and, in reply to the coroner, he added that though laughing-gas was not dangerous, its effects did not last long

enough to permit an operation like this, which would have taken a quarter of an hour. The death-rate from the administration of chloroform was, he said, about one per thousand. The jury returned a verdict of accidental death.—*Medical Times and Gazette*.

AN inquest was held at the University College Hospital on H. S—, aged 33, a licensed victualler. Dr. Edward Mawlesly, resident medical officer, stated that the deceased was admitted to the hospital suffering from cancer of the tongue. Chloroform was administered that Mr. Barker might perform an operation. The heart was examined beforehand, but nothing to suggest that chloroform would be dangerous was discovered. The deceased took it well, but three minutes afterwards breathing ceased. A post-mortem examination showed that the heart, liver, and kidneys were diseased, and that the only chance of prolonging life had been by the removal of the tongue. There has been no death from chloroform at this hospital in three years, though chloroform had been administered in 3000 cases during that period.

A CORRESPONDENT to the 'Lancet' gives an account of an extraordinary case of early puberty in a boy. His present age is six years and seven months, height 4 feet 9 inches; the voice has been gruff and hoarse for about a year, the genital organs fully developed as in the adult, with thick brown hair on the pubes, which first appeared when he was three years old. Hair has commenced to grow on the upper lip, and the permanent teeth appeared at between four and five years of age. Owing to his wild and mischievous habits he has been sent to an industrial school for five years.

Dental News.

THE ANNUAL GENERAL MEETING OF THE BRITISH DENTAL ASSOCIATION.

THE Second Annual General Meeting of the British Dental Association took place at Liverpool on Friday and Saturday the 25th and 26th ult., in the rooms of the Medical Institute, Mount Pleasant, which had been kindly placed at the disposal of the Association by the Liverpool Medical Society.

On the 25th the Representative Board met in the Council Rooms at 9.30 a.m., and at 11 a.m. the members generally assembled in the large room of the Institute for the business meeting.

In the absence of the President the chair was occupied by the Vice-President, Mr. Thomas Underwood, who was assisted by Mr. Champion, President-elect, Mr. J. S. Turner, Hon. Sec., Mr. W. H. Waite, of Liverpool, Local Sec., Mr. James Parkinson, the Hon. Treasurer, and about a hundred members.

The CHAIRMAN, in opening the proceedings, said he was sorry to say that their excellent President was unable to be present owing to the illness of his brother. Mr. Tomes begged him to say that he had looked forward to this meeting—the second annual meeting of the Association, and the first one held out of London—with a great deal of pleasure, and very much regretted his inability to attend it. He (the Chairman) also very much regretted that, as Vice-President, he had been obliged to take the place of one so infinitely better able to discharge the duties of the office—one whose whole system, he might say, was so thoroughly saturated with Dental politics and the interests of the profession—and he must throw himself on the kindness of the meeting in his endeavours to discharge to the best of his ability the onerous duties which devolved upon the retiring President in introducing his successor. He would now call upon the Treasurer to read his report.

Mr. JAMES PARKINSON (the Hon. Treasurer) reported that the subscriptions due on the 1st December last, when the number of members was 492, numbered 124, those of 29 members having been owing for two years. The balance at the back was £311 18s. 6d., the cash at interest was £150, and the arrears he had calculated at £160 13s., making a total of £622 11s. 6d. There might be a trifle

more in the Secretary's hands, but he thought they might take about £630 as the balance in hand, minus the subscriptions in arrear.

The CHAIRMAN said he thought that whilst the meeting would consider that, under the circumstances, the report was very satisfactory, their opinion would be the same as that of the Representative Board—that members should be more punctual in the payment of their subscriptions. He would now call upon the Secretary to read his report.

Mr. J. SMITH TURNER (the Hon. Sec.) read the report as follows :

Mr. Chairman and Gentlemen,—The principal events connected with the history of our Association have been from time to time faithfully reported in our journal, and the bearings of the action of the Representative Board and Business Committee will be clearly set forth in the address of our esteemed President. As a consequence the Secretary's report need not be either long or exhaustive.

Although the Association was established by the unanimous vote of a meeting of Dentists held in Willis's Rooms, London, on the 3rd day of March, 1880, when the expiring Dental Reform Committee was resuscitated under the title of the Representative Board of the British Dental Association, the gentlemen thus entrusted with the task of giving the Association a corporate existence in addition to that of a mere name, found that many circumstances, which may either be called difficulties or the ordinary impediments which have to be surmounted in the formation of any association intended to have more than an ephemeral existence, were such as could only be overcome by a long process of steady work, and that beyond a given point no extra energy, however honestly applied, could push the matter forward.

The functions delegated to the Association were, in a certain sense, of a belligerent nature, and thus power conferred to rash or injudicious persons, or even to the wisest and most cautious amongst us, might by a very slight error lead to every member of the Association being saddled with an amount of responsibility never contemplated by any of those who had voted for its formation.

Then, again, it was clearly seen by the Representative Board that the journal which had the largest circulation in our profession was daily becoming more and more antagonistic to the principles which had been adopted by the Association, and that unless we could establish an organ which could, irrespective of any commercial consideration, advocate our views, we could not expect to have that

influence as an Association which it was and is our aim to possess.

Here, then, were three obstacles to our progress—First, the danger of unlimited responsibility incurred by rash members of the Association. Second, the danger which always attends the publication of any periodical, more particularly when its functions are more or less of a political character. And third, the pecuniary responsibility attached to those who might be willing to form a guarantee fund for the support of any periodical such as the Association might possess.

With such contingencies before them, the most enthusiastic of our supporters paused in their advances, while the more timid became more reserved, and the indifferent discovered a good excuse for their continued indifference.

The reasonable scruples of the first two classes have been successfully overcome; that of the third, or indifferent class, has proved the most difficult of all. But I trust that even this class will in the future diminish even more rapidly than it has been doing until it entirely disappears.

The method adopted by the Representative Board to protect the members of the Association from any liability beyond their annual subscriptions was to enrol ourselves as an incorporated body under the Companies' Act of 1867. Now, any one who has had the smallest experience in drawing up a set of bye-laws, either for one of our Branch Associations or for a local cricket club, and those who have had the further experience of the extraordinary difficulty of meeting every contingency by the provisions of bye-laws, however carefully framed, may form some conception of the task set before the Representative Board when it had to organise our Association so as to be what we desired, and still be fit for registration by the Board of Trade.

For, be it noted, that our Memorandum and Articles of Association, although appearing innocent enough in the copy of our laws, are hard and fast conditions which admit of no modification or variation, however much such changes may appear desirable.

Fortunately we had a President whose mental qualities eminently fitted him for the task of framing our constitution. Moreover, he had the time which it was absolutely necessary to devote to such an undertaking, and his position in the scientific world enabled him to secure help and advice from the most desirable sources; and with the generous advice of Mr. Fowke, the Secretary of the British Medical Association, he was enabled to frame the Memorandum and Articles of Association, and also to enable the Representative Board to

form such a set of bye-laws as was, with a few modifications, accepted by the Board of Trade. This incorporation of the British Dental Association was accomplished in June, 1880, and it was not until this had been settled that the Representative Board could appeal to the profession for the support to which it is most undoubtedly entitled.

Up till recently our place of abode had been nominal, but at the commencement of the present year an arrangement was entered into with the Committee of Management of the Dental Hospital of London whereby we enjoy the necessary accommodation for our business meetings and other matters at the very modest expenditure of ten guineas per annum.

During the current year the Representative Board has voted a yearly sum of £50 for the services of a Secretary to the Association, and it is with much pleasure that I can report that in Mr. J. F. Pink we have secured the services of a gentleman who will become more and more useful to the Association as he becomes more familiar with his duties.

As may be seen from the Journal, we have during the past year been busy with the Medical Council, and have also taken advantage of the sittings of the Royal Commission on the Medical Acts to make known our hearts, and to defend the position which we have attained. The evidence of our President before the Commission will be published as soon as the Blue Book comes to hand, as will also the evidence of the president of another association, and our readers will thus be able to form an opinion of their relative value.

The numerous fresh cases of infringement of the Dentists Act, which are continually being brought before the Business Committee, as also the infringement of the rules of the Association, has so far been met by moral force, and although lawyers' letters are not unknown in this business, we on our side have been hitherto able to accomplish our ends without any such extraneous aid. Now that the Medical Council has left us to our own devices we will, I hope, be able to attend more diligently to all such cases, and if some had been allowed to slip, I trust that those gentlemen who have brought them under the notice of the Association will pardon what must seem carelessness to them, but what is in reality physical and mental inability on the part of the Honorary Secretary to encompass all that is required of him.

With a view to enabling the Business Committee to take prompt action in cases of infringement of the Dentists Act, a memorial has been sent to the Medical Council asking permission to take action in any case which might arise dur-

ing the intervals of the Branch Council's meetings, but to this there was no reply given by the Council.

In the case of Mr. T. L. Callender, of Burton, the Association, in the name of the Hon. Secretary, has received power to take action. As I have not yet been able to meet our solicitor I am unable to report any addition to this statement.

Since the publication of our list of members in January we have had thirty new names added to our list and four resignations, and at present we stand on the verge of a roll of 500, the strict number, as nearly as I can state it, being 498.

The publication of our journal has been of much service to the Association. Besides the issue to our members it has necessarily a large gratuitous circulation, rendered necessary by the importance of keeping our views and aspirations before the proper authorities, and by our endeavour to make a position for it in the professional literature of the day. The Publication Committee and the Association at large owe a deep debt of gratitude to Messrs. Walker and Coleman for the energetic and careful manner in which they have piloted the journal through the first stages of its existence, and we trust that these gentlemen may see the results of their generous exertions in the growth of a healthy and vigorous professional periodical, second to none in literary excellence and usefulness.

The suggestions of the Representative Board with regard to its retiring Members will be laid before you, and it will be your duty to select those who are willing to serve another term of office, or to find such substitutes as are willing to fill their place.

The locality of our next annual meeting will also have to be considered and, in connection with this the choice of the President-elect for the ensuing year.

The CHAIRMAN said the next question they had to settle was where the next annual meeting of the Association should be held, and the view of the Representative Board was that, seeing that the Western Branch was first affiliated to the Association, it would be a compliment to it if the annual meeting next year were held at Plymouth; the desire of the Association being that the great centres with which the Branch Associations were connected should each of them be visited at these annual meetings. If there were any dissension from the suggestion of the Representative Board, any one who had any other place to propose, he should be pleased to hear his proposition.

Mr. CANTON proposed, and Mr. COLEMAN seconded, the

adoption of the suggestion of the Representative Board, and it was unanimously resolved that the next meeting be held at Plymouth.

It was also resolved, on the motion of Mr. ROGERS (Cheltenham), seconded by Mr. DILCOCK (Liverpool), that the days of the meeting be the 24th and 25th August next.

The CHAIRMAN said that Plymouth having been selected as the place of meeting, he thought the members of the Association would agree with the Representative Board that there was one gentleman in Plymouth who was pre-eminently qualified to be the President-elect for the ensuing year. He meant Mr. Charles Spence Bate, F.R.S. Would some gentleman be good enough to propose that Mr. Bate be the President-elect.

The proposition was moved by Mr. VANDERPANT (Kingston), seconded by Mr. WOOD (Brighton), and carried unanimously.

The CHAIRMAN.—It is now my duty to read you the valedictory address of our late President. He gives in it a clear and succinct account of the proceedings of the past year, and points out the position in which this Association now stands before the country at large.*

Mr. RYMER moved "That the cordial thanks of this meeting be presented to John Tomes, Esq., F.R.S., for his invaluable services as President during the past year."

Mr. WEST seconded the motion, which was carried amidst loud applause.

The CHAIRMAN.—It now becomes my pleasing duty, in accordance with a resolution passed at the last annual meeting, to introduce to the chair Mr. Campion, of Manchester. Your reception of his name is a sufficient guarantee that the meeting last year exercised a wise discretion in confiding the interests of this important Association to the hands of one so well calculated by his capability and character to successfully pilot the vessel through the storms and breakers that may be ahead. Mr. Campion's reputation in the profession needs no encomium from me; it is patent to the whole of his professional brethren, and has been for many years. His great capability and strict integrity make him an honour to the profession. Mr. Campion, with that modesty which generally goes side by side with the possession of power, has the feeling—and I don't wonder at it—that the office to which you have elected him is an extremely important one, and one requiring the exercise of great caution, seeing that the Association had much before it, and

* Mr. Tomes' Address is concluded in our present issue.—Ed. B. J. D. S.

was only, as it were, on the threshold of its work : but, with these qualms he is supported by the fact that his election received the sanction of the whole of his professional brethren. With these few words, gentlemen, I quit this chair, and request Mr. Campion to take it.

Mr. CAMPION having taken the chair amidst loud applause, said :—Gentlemen, the remarks of your late Chairman have taken me so much by surprise that I feel that I cannot do more at the present moment than thank him for them, and thank you for the kindly way in which you have received them. I will at once, therefore, proceed with the few words I have to read to you.*

THE DINNER.

THE Annual Dinner took place in the evening at the Adelphi Hotel, and was largely attended. The chair was occupied by the President, H. Campion, Esq., and the vice-chair by T. Underwood, Esq., Vice-President. Amongst those present were the Mayor of Liverpool (Mr. John Hughes), Mr. J. Smith Turner, London (Hon. Secretary), Major R. E. Stewart, Captain R. Rogers, Captain Newman, Dr. Gee, Dr. Glynn, Dr. Simpson, Dr. F. Heath, Dr. Braidwood, Dr. Walker, Dr. Kisch, Dr. R. H. Johnson, Dr. Pollard ; Messrs. W. B. Macleod, H. Sewill, A. J. Woodhouse, S. Wormald, C. S. Tones, A. Coleman, S. L. Rymer, Edgar Browne, C. Vasey, T. Dilcock, T. J. Moore, R. White, J. Parkinson, T. Dawson, W. Heath, H. C. Quinby, Oakley Coles, M. Quinby, J. G. Roberts, F. J. Paul, &c.

After dinner, "The Health of the Queen and Royal Family" having been proposed by the PRESIDENT, Mr. UNDERWOOD proposed "The Army, Navy, and Reserve Forces," to which Major STEWART responded.

Mr. COLEMAN then proposed "The Manchester School of Medicine," which was, he believed, one of the longest established of the provincial schools, and was, moreover, connected with that admirable institution for scientific instruction, Owens College. It had a rival—an honorable rival, he believed—in the Liverpool School of Medicine, and the result of that honorable rivalry and that valuable and wholesome competition had been that the two schools had profited. Between those two institutions he believed there was a union proposed, and that some arrangement might be made by which the students of both might avail themselves

* Mr. Campion's Address will be found on page 936.

of another most valuable foundation in Liverpool, the University College, for obtaining that scientific and literary instruction which was, and should always be, the precursor to medical knowledge. He hoped that at some not very remote future members of their body would be able to avail themselves of the degrees that would be granted by the Victoria University. It had been his great privilege to have been connected for many years with one of the largest of the London schools of medicine, and there he had often met gentlemen who went through a portion of their course of study at the provincial schools, and for certain purposes finished at the London schools; and it had been his remark, which was well borne out by his colleagues at that institution, that those gentlemen were as well taught as, and better grounded than, the London men. He had no doubt they were provided with better opportunities in the provinces; at all events, their teaching was up to the mark—nay, more than up to the mark—and the result was that from these provincial schools had been turned out some of the most celebrated physicians and surgeons of the day. It would be invidious on his part to point out on such an occasion men who had been educated at the schools of Liverpool and Manchester, and who stood prominent as surgeons and physicians, but he might go so far as to say that he had had the honour to be associated with gentlemen of the highest position as physicians and surgeons, and as men of high integrity and morality, who had been educated at provincial schools. He thanked the President for having asked him to propose this toast, and he had much pleasure in coupling it with the name of Dr. Simpson.

Dr. SIMPSON, in acknowledging the toast, said that either the irregularities of the train service, or some other reason which he was not aware of, had prevented some of his colleagues being present who would have responded to this toast very much more ably than he could—Dr. Lund, Dr. Morgan, and Dr. Leach. Their names were in the list of guests, but they were not present, and it had therefore fallen upon him to respond to the toast, which he was certainly not prepared to do. He might say that those who had come there from Manchester had not come to put forward their school in rivalry with that of Liverpool, but rather considered them both engaged in the same cause, and in a race which was honorable to each, and in which if one was first the other was sure to be a good second. Both schools had great advantages, and he thought from his knowledge of medical education that provincial schools might compare favorably in some respects even with those of London, and

that in some points their students had superior opportunities. He thanked them heartily for the cordial way in which they had received the toast of the Manchester School, and he wished prosperity to the Liverpool School as well as to his own.

Mr. J. OAKLEY COLES, in proposing "The City and Trade of Liverpool," said it seemed to him a most felicitous circumstance that the first meeting of the Association in the provinces should have taken place in the ancient town of Liverpool. All its traditions were of a hospitable character, of which they had already had singular evidence, although they had only been there so short a time as one day. It was also a most gratifying circumstance that on their first provincial gathering they were honoured with the presence at their festive board of the Chief Magistrate of the town. Those who were disposed to cavil at the social position of the Dental Surgeon might take consolation when they found so distinct a recognition from one holding so important a position as the Mayor of Liverpool. Liverpool was very intimately connected with the history of the Dental profession, and he was not sure that they were all aware how intimately it was also connected with the history of the profession in America. The first Dentist who ever practised in the United States of America started from Liverpool for that destination. But it was an unfortunate circumstance, and exemplified the inhospitable character of the United States of that period, that, after staying in New York and Philadelphia for two years, he returned to Liverpool. Following him, the next person practising Dentistry in the United States was Monsieur Giardet, a surgeon of the French navy. Then came James Greenwood, the first native-born American Dentist; and after him, a son of the same Wolfendon who started in 1806 from the ancient town of Liverpool. So that the first and fourth Dentists who practised in America were from Liverpool, which was thus connected with the foundation of the profession in the New World. He had intended, as it seemed incumbent on him as the proposer of this toast, to make himself acquainted with all the details of the history of Liverpool, and he had gone about with those two bulky volumes of 'Picton's History of Liverpool' in his pocket, and had glanced at intervals over the pages at the end of the Directory, with the view of obtaining such knowledge of the affairs of the town as would enable him to do due credit to the toast which he knew would be placed in his hands that evening; but the account of the town of Liverpool he had intended to lay before them was made up of fragments which he feared were not properly adjusted

one to another. There were, however, certain facts which stood out in his memory as landmarks. For instance, looking at the enormous acreage of docks at present existing, it seemed incredible that within something like two hundred years there was only one dock in Liverpool, and that the only one in England. It seemed amazing that during that period Liverpool should have become the water-gate of England. This was a matter of congratulation to the Liverpool people; but it was a matter of congratulation to the members of the British Dental Association that they had had the honour of holding their first provincial meeting in this ancient town. He had, therefore, extreme satisfaction in proposing "The City and Trade of Liverpool," and in coupling with the toast the name of the Mayor.

The MAYOR, who on rising to reply was loudly cheered, said he felt very much indebted to the gentleman who had proposed the toast, and very much obliged to the company for the kind way in which they had received it. He was sorry that the gentleman who proposed the toast was not well posted up with regard to the history of Liverpool during the last twenty years. During that period the town had made wonderful progress, as he thought they would admit when he told them that the dues paid at the port, which twenty years ago were something like £4,000,000, amounted in 1881 to between £7,000,000 and £8,000,000. Having been placed in the proud position of Mayor of that city, his humble effort had been, and would continue to be, to fill the office with dignity, and to extend its hospitality not only to those who were citizens, but to those distinguished persons, and members of useful and important associations, who occasionally visited the city. He felt very great pleasure in being present that evening, at the request of his friend Major Stewart. He had intended to be absent from Liverpool on his holiday, but he felt that as the Dental Association was coming to Liverpool for the first time it was his duty, as Mayor of the city, to do all he could to give the members a cordial welcome. He was only sorry that he had not been made aware of their arrangements earlier, so that he might have had the pleasure of entertaining them at the Town Hall. He thanked them for the way in which they had received the toast, and he assured them that they would take away with them from Liverpool the hearty goodwill of its Mayor and his best wishes for the prosperity and success of their Association.

Mr. A. J. WOODHOUSE said he was not fond of speaking, but there were times when those least fond of doing it had pleasure in making a speech, or trying to do so. He rose

to propose the health of "The President." They had all known Mr. Champion for many years and honoured and respected him, as all who knew him must do. He had had perhaps a longer acquaintance or friendship with him than any one in the room. It had its commencement in a game of marbles. He was the President's senior at school and the President looked upon it as a great honour that he was allowed to play at marbles with him, a big boy. They were afterwards pupils together and had been friends ever since. The Association had done wisely, and he was sure they all knew it, in selecting Mr. Champion as their President. In him they had found one who was an honour to the profession to which they belonged, and he hoped that they might in the future be able to find in other parts of the kingdom, men who would do as much honour as Mr. Champion did to the position he now held.

The PRESIDENT.—Mr. Mayor and gentlemen, I cannot conceal from myself that it is with mingled feelings of pleasure, distrust and fear that I rise to address you to-night, and to thank you for the hearty manner in which you have responded to the toast just proposed. I feel it a pleasure when I think of the progress our Association has made, and the success of our meeting to-day, and also when I look around me on this large and influential company assembled here to-night to do honour to the British Dental Association on its first meeting in the provinces. But this feeling of pleasure is more than counterbalanced by one of distrust when I consider my own inefficiency for my present important position, and by the fear lest I may be unable efficiently to protect the important trust you have this day committed to my charge. Would that I could think myself deserving one-half the kind things my friend has just said of me, and that I could feel that my actions in times past had been more in harmony with the thoughts of the poet when he wrote:

"Small though our strength, let each do what he can
Whate'er conduces to the march of mind,
Whate'er binds man in closer ties to man,
Should in each generous heart a patron find."

Gentlemen, I look upon this day as marking an era, and a very important era, in the history of our Association—an Association which, I think, may not inaptly be compared to one of those grand productions of our naval architects which for so many centuries have formed the unconquered bulwarks of what the old song so quaintly describes as "our tight little island," and have also proved the foundation of the wonderful commercial prosperity of this great and important

city. Long may our barque prove as efficient in protecting our profession from the attacks of empirics and charlatans, and from the influence of all who wish us evil, as the wooden walls of old England have been in protecting her from her foes; and may we never see the day when scientific speculation will be permitted in either case to undermine any of the defences with which we are at present surrounded.

Gentlemen, many of you were present, and doubtless retain a pleasing reminiscence of the day when our ship was first launched on what has proved not to be a stormless ocean, and some of you know only too well the enormous amount of labour which was necessary for the moulding, fitting, and binding together of the apparently incongruous materials out of which it was constructed. But, gentlemen, you also know that that labour contained within itself an unfailing element of success, for it was a labour of love on the part of those who bestowed it. Well, not only has our barque been built and launched, but having made its trial trip and taken its first cruise in what may be called the home waters, we are now met together to welcome it on its first voyage. Should it not on its return home be found laden to the full with untold treasures, still I trust the crew will at least be able to say with the voyagers of old when shipwrecked on the unknown island on their memorable voyage to Rome, "The barbarians showed us no little kindness;" but, be that as it may, certain I am that their visit will leave behind it such pleasant reminiscences that the next appearance of their barque in the northern seas will be looked forward to with no small amount of pleasurable anticipation. I will not detain you longer than to thank you, sir, for the kind manner in which you have proposed my health, and you, gentlemen all, for the hearty manner in which you have responded to it.

Mr. C. S. TOMES, in proposing "The Liverpool University College and School of Medicine," said that although he had a warm feeling of sympathy for every school of science, he had an objection—perhaps an unreasonable one—to speak of an institution which he knew nothing about, and so he got his friend Major Stewart to take him through the Liverpool School of Medicine that morning, that he might see it, as he had often heard of it as perhaps the most prominent of all the provincial schools; and in going through the laboratories, dissecting rooms, and lecture theatres of the school, he experienced the wish that his own student days could come back again, and the feeling with what zest one would set to work on all sorts of things if one had only the time and energy one had in those days. The Liverpool

school had now got premises which were excellent for their purpose, and which were undergoing alterations in order to afford still greater accommodation to the students; and lectures on subjects appertaining to Dentistry were now delivered to students going up for the examination of the London College of Surgeons. He had great pleasure in proposing the toast, and in coupling with it the name of Dr. Glynn.

Dr. GLYNN said he should have responded with much less hesitation to the toast of the Liverpool Medical School than to that of the University College, for he had not the honour of being a professor at the University College. At the same time, the two institutions were now so closely united that they must rise or fall together. For their success these institutions depended not only on the efforts of the teachers, but on the kindly feeling of sympathising friends; and he was quite sure his colleagues would all thoroughly appreciate the cordial expressions which had fallen from such a scientific and influential body as the British Dental Association. The University College was yet in its infancy, but he trusted the time might come when it might even rival that splendid institution in Manchester, Owens College; and as to the Medical School, he hoped that whatever happened the friendly relationship between it and the Manchester School would always continue.

The PRESIDENT said the next toast was "The British Dental Association and Branches," which would be proposed by Mr. Edgar Browne, and coupled with the names of Mr. Turner and Mr. Rogers.

Mr. EDGAR BROWNE said he thought first of all it was only courteous to thank them for their great kindness and the honour they had done him in asking him to be present that evening, and for the very pleasant evening they had given him. It was certainly to him a remarkable occasion, because it was the first occasion on which he had come amongst their honorable profession and not been afraid of opening his mouth. He found that their Honorary Secretary had the great judgment to give the strongest toast to the weakest speaker. It was only that knowledge which gave him the slightest encouragement to proceed with what would otherwise be a very uphill task, for he felt that he need say but little in proposing the toast which had been assigned to him. He would, however, go on and do his best to respond to the call of duty. It was a very great pleasure to anybody, whether connected with their special branch, or whether belonging only to that branch to which he was not ashamed to say that he belonged, to see any effort made

to elevate the profession, because it was invariably found that whenever efforts were made to improve the social status or position by the formation of an association of that kind, the movement was only the outward and visible sign of an aspiration which had begun within. They did not find men forming themselves into associations and endeavouring to raise themselves into positions unless a great many men in the profession had already raised themselves to good positions and become dissatisfied with certain drawbacks attending it. The great drawbacks upon all professions were not the heads of the professions but the tails. They had great difficulty in dealing with their tails. In that branch of the profession to which he belonged they fondly imagined they had got rid of their tail—as the great Lord Monboddoo thought primeval man had got rid of his—by sitting on it. But their tail, though not quite in the position of the monkeys, was long enough to get into the mud. Then there was the clerical profession. He was sorry to say that that had a tail, and sometimes it was a very unpleasant tail, which unfolded itself in the police court when the weather had been very hot. The legal profession had also a tail, but like that of a pig at a fair, it was so carefully soaped that no one could get hold of it. It had been the misfortune of the Dental branch of the profession to be kept down by its tail. The tail had been enormous in proportion to the body, and it had been a perfectly monstrous thing that men of ability, integrity and honour, men of good previous education, with all the attributes of gentlemen, men who in addition to all that had been spent upon their previous education, had given an immense amount of time and spent a large amount of money in premiums and fees in order to obtain a special skill, and had purposely delayed putting that skill into the market until they felt that it was the very best that could be put forward—it had been a sad and monstrous thing that men of such a social status should be in the remotest degree confounded with those impudent impostors who had just money enough to go to a marine store and buy a pair of forceps with which to break the jaw of the first person that came into their place. It was the honorable intention of this Association, and an intention which he was sure would be carried out, to raise the whole of the profession, and do away with all this unqualified practice, which was not only bad for the profession but bad for the public. Therefore he thought he should carry the sense of the company with him if he asked them to drink in all sincerity the prosperity of the Association, joining with the toast the names of Mr. Turner and Mr. Rogers.

Mr. J. SMITH TURNER said he rose to respond to the toast which the company had just received so kindly, with a feeling of depression, not that he had had a day's work which had overcome him, or that he had been overcome by anything which had followed the day's work, but because they would find on the programme that the person who was to have responded to this toast was their esteemed ex-President, Mr. John Tomes. He was sorry to say that Mr. Tomes had been prevented from being with them that day by a severe family affliction. Nothing else would have kept him away. He was most anxious to attend, but he found that his duty lay most imperatively in another direction. With regard to the British Dental Association it was only, as had been well remarked, a baby going through its first dentition, and he had not even a period of twenty years to go over to refer to events in its past history. But the history of the Association had not been altogether unchequered. Most of them knew that it had its origin in the consummation of the work of the Dental Reform Committee when the Dentists Act became the law of the land. One of the objects of its originators was to promote social intercourse between members of the profession, and he thought that if the company looked around they would admit that in that respect at any rate there had been no failure. It was also felt that by holding meetings, reading scientific papers, and discussing the merits of certain courses pursued in their practice, they would not only increase the interest they took in each other, but would enlighten themselves on various matters in regard to which, by isolation, they were kept in ignorance, and so be able to serve the public more efficiently in the calling to which they had devoted themselves. Then, another of the objects they had in view was to maintain the status of the profession in the spirit of the Dentists Act. That Act was, as they thought, a very efficient Act if properly interpreted by the powers that be. He would not detain the company long with this matter, because it was getting a stale story, but he thought it well that one or two who had not followed the history of the matter should know something of the events connected with the progress of the Dentists Act and the British Dental Association. They must know that this Act gave certain powers to the Medical Council. Now, this Medical Council seemed to him to be a very peculiar body. It seemed to him to be essentially a talking body. It refused to take up the functions that had been conferred upon it by the Act of Parliament; it refused to become an administrative or a judicial body, and to exercise the powers that had been given it, but it shielded

itself under some paltry quibble, or the opinion of some half-fossilised lawyer. The tail of the Dental profession had been alluded to. It had indeed a very long tail. Some people thought it was all tail. But they were not afraid of that, for they believed that there was some good muscular tissue in it, and they had no fear but that it would become developed in such a manner that the caudal appendage would become less and the vertebræ would become larger and stronger. But they had had attached to this tail a heavy weight which was not anatomically, or even legally, connected with it, but connected with it only by some twisting of words which had been employed by some of the leaders of the Medical Council in interpreting the Dentists Act. As a consequence they had had attached to their tail a weight of dead matter which he was afraid must remain there for a long time to come. He thought it was a pity that a number of men who had been employed as chemists' shop boys, &c., should have been allowed to come on the Dental Register for the sake of discrediting that Register in the eyes of the medical profession. It was an unfortunate thing that these men should have been allowed to come on the Register, not because they could do any particular injury to the rest of the profession, for he was quite sure that the old men now amongst them in the profession were quite competent to hold their own against such pretenders to Dental knowledge; but he thought it was a pity, for the sake of the general public, that the Medical Council should have so far abrogated its functions as to allow such a number of unqualified men to come on the Dental Register. He thanked the company in the name of the British Dental Association for the manner in which they had received the toast, and he thanked them personally for the honour they had done him in having associated his name with it. As he stated before, he was extremely sorry that so great a man as their ex-President should have been represented by so poor a substitute.

Mr. R. ROGERS responded on behalf of the Branch Associations, which he said he was sure would always do their best to aid the central Association. There were, he believed, now four Branch Associations, and the sooner they had a branch in every county in England the sooner they would resemble the British Medical Association, which he believed they held up as their standard. He was surprised that the Eastern Counties Association had not affiliated with the General Association, and he hoped that before the next meeting they would have done so, for it was a moral impos-

sibility for them to work amicably together unless they were united.

Mr. R. WHITE next proposed "The Honorary Secretary and other Officers."

Mr. PARKINSON in responding, said he was in some measure disappointed with the smallness of the number of Members of the Association. It had always been on his mind that, looking at a list of the names of reputable persons practising Dentistry, they ought to be able to count in their Association a vastly greater number. They numbered, he believed, something over 500, but he did not think they ought to stop there, for he was quite satisfied that by united effort they could go a great deal further.

Dr. WAITE also responded. He said many present would remember the admirable address delivered in April last by Mr. White as President of the Eastern Counties Dental Association. In the course of that address he said he believed it better for the Dental body to be connected with a profession so elevated as the medical. That feeling was undoubtedly gaining ground. The political aspect of the connection might be a matter for some diversity of opinion, but they would do well to consider other and more important aspects of their relation. If they would maintain their ambition to take rank as an important wing of the great healing army, they must certainly manifest a determination toward those qualities which had elevated the medical profession to its present standard. And what were those qualities? Briefly, they might be stated thus:—(1) A high degree of cultivation in scientific knowledge and practical skill; (2) unbounded generosity in making the resources of their cultivation available to public necessity; (3) the spirit of self-sacrifice. The combination of these characteristics had evolved a moral tone that was unexcelled by any other calling. That their medical brethren had delved into the mines of scientific lore, and brought out of nature's storehouse the marvellous secrets and resources that lay hidden therein; that they had acquainted themselves with the minute structure and functions of the human organism, and so, as it were, anticipated by investigation well-nigh every form of derangement to which that organism was liable; that they were equipped with remedies, appliances, and skill, ready to do battle with disease and wage oft-times successful conflict with death—all this, and much besides, went nowadays without saying; yet these alone were insufficient to explain the proud position held by the medical practitioner in the esteem of the entire community. He knew not where to seek an explanation, unless it were to be found in the moral

tone that was so intimately associated with the general practice of medicine in this country, and he took it that Dentists would benefit by their connection with the medical profession in the proportion in which they imitated and emulated their prominent characteristics. The least they could do was to declare themselves on the side of progress. They were progressing, and they meant to progress still further. The times of selfish inactivity were past; the period of self-consecration and self-sacrifice had dawned. It was a period of transition from darkness to light, from bondage to liberty—a period of sifting and searching, wherein the honesty of individual purpose would surely appear. Let them imitate their medical friends, and in another fifty years mayhap some one would point to the Dental profession and admire its devotedness to the pursuit of knowledge, its patience in the application of ascertained methods, and, above all, its lofty moral tone, exhibited by its generosity and self-sacrifice.

“The Lancashire Lasses,” proposed by Major STEWART, and responded to by Dr. CUNNINGHAM, was the concluding toast.

During the dinner the band of the Liverpool Press Guard played in the vestibule, and subsequently an excellent musical programme was provided by a glee choir.

APPOINTMENTS.

MR. GEORGE COOKSEY, L.D.S. Eng., has been appointed Hon. Dental Surgeon to the Preston and County of Lancaster Royal Infirmary.

MR. J. EMERSON RICHARDSON, L.D.S. I., has been appointed Hon. Dental Surgeon to the Derby Amalgamated Friendly Societies Medical Associations.

MR. WILLOUGHBY WEISS, L.D.S. Eng., has been appointed Hon. Dental Surgeon to the Western General Dispensary, Marylebone Road, W.

THE ASHENHURST FUND.

THAT “that which is everyone’s duty is no one’s duty” seems almost verified by the sadly few names of those who have so kindly subscribed towards the relief of the young widow and her five children. Were it realised by the many that a little, *a very little*, from each would place her in busi-

ness and above the cruel reality of absolute want, we feel quite certain that little would be forthcoming. A shilling or two each is all that is required. All those who can spare it are earnestly begged *to assist so urgent a case.*

Further Subscription.

Dr. Walker £1 1 0

Subscriptions will be gratefully received by Messrs. C. Ash and Sons, the Dental Manufacturing Company, Mr. Rutterford, Messrs. Jamieson, or the Editor of the 'British Journal of Dental Science.'

Correspondence.

[We do not hold ourselves responsible for the opinions expressed by our Correspondents.]

THE TREATMENT OF ACUTE ALVEOLITIS, GINGIVITIS, PERIODONTITIS, &c.

To the Editor of the 'British Journal of Dental Science.'

SIR,—Having often felt the want of a ready means of relieving the pain and hyperæsthesia which is present in alveolitis, gingivitis, periodontitis, &c., without ignoring the useful properties of Tinct. Iodine or Aconite, I determined to try a solution of chloride of aluminum (chloralum), and was delighted to find, in the first case in which I employed it, about seven years ago, it proved a complete success, beyond my expectations; and the almost unvarying relief which a frequent use of it has ever since proved in my hands, warrant me in communicating the results of my observations with the use of this most excellent therapeutic agent, which I believe to be quite a boon to the Dentist, superior to any other in the British Pharmacopœa for these troublesome and painful forms of Dental disease.

My method of using it is as follows: A drachm or two of chloralum—according to the case in hand—is put into a tumbler three parts full of *warm water*. The patient is directed to take a good mouthful and hold it against the side of the mouth affected for about two minutes, then deposit it into the basin, and repeat this for ten to fifteen minutes, when it will be found the hyperæsthesia is materially lessened, so that in many cases when necessary extractions may safely be proceeded with, which would otherwise be quite impracticable on account of the excessive pain which would be inflicted and the hæmorrhage which would follow

if attempted without this treatment; and for humanity's sake I never omit to employ it before all Dental surgical operations whenever local inflammation is present, whether an anæsthetic is to be used or not. The extra time demanded may in many cases be regarded as an urgent reason why it may be dispensed with, but this aspect of the question will only apply when the patient is too poor to afford a reasonable fee for the extra time involved by the complication of the case. With the majority of practitioners, I trust, feelings of humanity will prevail. It is chiefly when persons visiting a Dentist reside at a considerable distance, or when from various causes a second visit is inconvenient, that this speedy remedy is so valuable. I should be pleased to know that others have found it as useful as I have.—I am &c.,

GEORGE ROBINSON, M.O.S. Gt. Brit.

Oamaru, Otago, New Zealand.

To Correspondents.

1. Communications intended for insertion in the ensuing number must be forwarded to the Editor, at the Office, 11, New Burlington Street, London, W. by the 8th and 23rd of the month, and must be duly authenticated by the name and address of the writer.
2. We cannot undertake to return communications unless the necessary postage stamps are forwarded.
3. All communications relative to subscriptions and advertisements are to be addressed to the Publishers, Messrs. J. and A. Churchill, 11, New Burlington Street, London, W.
4. The Journal will be supplied direct from the office on PREPAYMENT of subscriptions as under:

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ANSWERS TO CORRESPONDENTS.

"F. P. P."—No notice can be taken of anonymous communications, but if "F. P. P." will acknowledge his letter as its subject is of interest it may be attended to.

Communications have been received from John Jamieson, Jun. (Glasgow), J. E. Richardson (Derby), F. Henri Weiss (London), E. C. Clarke (Banya), Willoughby Weiss (London), George Ward (London), Frank Hall (Hertford), J. H. Parkinson (St. Helens), George Robinson (New Zealand), Messrs. Smale Brothers (London), Messrs. Ash & Sons (London), "F. P. P."

BOOKS AND PAPERS RECEIVED.

'Lancet.' 'Medical Digest,' Neale. 'Mechanical Dentistry,' 2nd Edition, Hunter. 'British Medical Journal.' 'Medical Times and Gazette.' 'L'Odontologie.' 'Journal of the British Dental Association.' 'Pharmaceutical Journal.' 'Chemist and Druggist.' 'Le Progreso Dentaire.' 'Missouri Dental Journal.' 'Appendix of Catalogue of Library of Odontological Society of Great Britain.' 'List of Members of the Odontological Society of Great Britain.' 'The American Journal of Dental Science.' 'Sulla Trapiantazione dei Dentic,' by Dr. Cacciaguerra.

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THE ETIOLOGY AND PATHOLOGY OF DENTAL DISEASES: WHAT WE KNOW, AND WHAT WE WOULD LIKE TO KNOW.

By HENRY SEWILL, M.R.C.S., L.D.S. ENG.*

ARE the teeth of the more highly civilised nations, or of certain classes within those nations, structurally deteriorating? This question is being constantly asked, and as constantly answered emphatically in the affirmative by observers whose opinions are entitled to respect. They state that at the present time it is extremely rare to meet with children possessing jaws and teeth superior in development to those of their parents, and that it is the rule to find the opposite prevail, the dental organs of children, in the vast majority of cases, being of markedly inferior formation. This opinion being expressed, various hypotheses are started to account for it. On *a priori* grounds some argue that it is only what might be expected. A high standard of physical comfort implies comparative disuse of teeth and jaws. The advance of the art of cooking has rendered food so soft that it calls for little chewing. Disuse of the organs of mastication leads in time to their wasting; characteristics of parents are transmitted as hereditary characters to their progeny, until at length a deterioration brought about in the individual becomes a family defect, and a generation is produced with ill-developed maxillæ and imperfect teeth. This argument is supported by the observations of Mr. Mummery, who

* Read at the Annual General Meeting of the British Dental Association at Liverpool, August 26th, 1882.

found well-formed jaws and good teeth in British burying-places of pre-historic man of the stone ages; a very considerable proportion of ill-formed and crowded jaws with apparent deterioration of the teeth, as evidenced by the presence of caries, in the Celts who succeeded, and still further deterioration in the jaws and teeth of the period of the Roman occupation—a period of great comparative luxury.

Against this reasoning it is pointed out that certain Asiatic races, who live on soft vegetable food, have well-made jaws and good teeth, therefore disuse of the organs of mastication will not in itself account for the alleged dental inferiority of the present day. It is next argued that, there occurs now—more than at any previous time—especially in the well-to-do and luxurious classes, survival of the physically imperfect, of those naturally unfitted to live under less favorable circumstances. Vast numbers of the phthisical, the scrofulous, the rickety, and the congenitally syphilitic, who would formerly have perished in childhood, are now by science preserved alive to propagate their kind and produce a sickly race. As to this argument regarding hereditary disease, we commonly notice teeth organically defective in the phthisical, the scrofulous and the rickety; and the evil effects of inherited syphilis upon the development of the dental tissues is a demonstrated fact.

In support of the main argument that dental deterioration is progressing it is further alleged that the demands upon the vital powers by the growth of the brain and nervous system, and especially their increased exercise in modern life, influence the development of the dental apparatus. The brain and jaws are alike fed from the common carotid artery, and it is urged, the demand for blood by the growing and working brain leads to imperfect supply to the masticatory organs. The cranial capacity of an average European exceeds that of the lowest races by nearly forty cubic inches, and this increase in bulk of brain is associated with an enormous extension in the complexity of the convolutions, and, in amount of grey matter, demanding a corresponding augmentation of blood supply. This is an argument of perhaps cardinal importance, as education is pushed keenly during

the very period of second dentition. The massive jaws and perfect teeth of the extant savage contrast remarkably with the narrow maxillæ and defective teeth of the educated European.

It is difficult to call in question the next statement that general physical deterioration must involve the dental structures, but it is very difficult to prove that such deterioration has, on the whole, occurred in the case of any nation. Yet, certainly, among the peoples of Western Europe, France seems under the gravest suspicion in this regard. The exhaustion of the manhood of France during the wars of the great Revolution, following upon the previous long-continued abject poverty and misery of the people, appears to have left its mark upon the race to the present day. The more luxurious ways and vices of later times, and especially the artificial limitation of the number of their children usually practised by parents, can hardly have been without effect. This artificial checking of increase of population has been effectual in France, and France is the only European country whose people remain stationary in numbers.

This must act in several ways to the detriment of the physical standard. It prevents, in great measure, that rapid destruction of the weaker in the battle of life which takes place where there is a redundant population, and it enables even poor parents to rear sickly offspring who would probably perish for lack of sufficient care and necessities of life were the number of children greater. We must not forget, further, that the firstborn who are thus reared are, as a rule, more delicate than later-born children, and are those most liable to inherit some diseases, such as syphilis. The physical deterioration of the French seems almost proved, and the evidence, although not conclusive, goes to show that their teeth are ill-made in proportion. There is, however, a possible fallacy in this reasoning as regards the teeth, for the French are the best cooks in the world, and the whole population without exception lives upon the softest food, including bread of the most delicate manufacture. In the North Germans, we may see a people presenting a marked contrast to the French in the whole of their environment.

Their climate is hard and ungenial, the soil ungenerous, and the whole nation comparatively in poverty. The classes who can be termed luxurious are insignificant in numbers, nearly the whole people, higher and lower, men and women, being engaged in arduous toil. Their diet is rough and simple, their bread coarse and mostly made of rye. These people, after the British, are the most prolific in Europe. Their racial characters give them a larger frame than that of the so-called Latin peoples, but, allowing for this, their physique would seem to be superior to the French, and offering it for what it is worth, as the result of my own limited observation only, I would say their jaw and dental development, are, as a rule, vastly superior.

If there has been any general physical deterioration of the people inhabiting our islands within late years it must probably be due to such causes as the aggregation of great masses of the population in towns, the sanitation of which is imperfect, and in the occupation of great numbers of men, women and children in the vitiated atmosphere of crowded and ill-ventilated workshops and factories. On the other hand, the great bulk of the British were never before so well sheltered, so well clad, so well provided with food and the smaller luxuries of life; and this is especially true of the agricultural classes, from whose ranks the townfolk are largely recruited, and whose dwellings a generation back were a national disgrace. Never before was the public health so well cared for, and never was there such comparative freedom from most diseases which leave their mark on the constitution of the victim, and lead to degeneracy in his descendants. Of living races the British is the most exuberantly fertile. The higher classes, although luxurious, are not enervated. They no longer take alcohol to excess, and their physique is maintained by their athleticism, which amounts to a passion, a passion not confined to youth or one sex, but affecting one and all, young and old, as testified by every scene of sport from the tennis court to the hunting field. I would suggest that if the organs of mastication are deteriorating, the cause in this country, at least, cannot be assigned to general decay. It may well be doubted whether

the general development of any European nation is inferior at the present day to what it was in mediæval times. In that age famine and plague were regular periodic visitations, malignant epidemics were rife, and the whole life was spent amidst unwholesome and unsanitary conditions. We know that in stature and length of limb—that is, osseous and muscular development—modern man notably exceeds his mediæval and more remote ancestors.

In the people of the United States there can be no doubt of the inferiority of the teeth, for the evidence is overwhelming; and the teeth seem worse as the ascent is made in the social scale. This remark, of course, applies only to that part of the population native by sufficiently long descent—to those upon whom the climate and other forces of evolution have set their mark. These influences would seem to be producing a specially modified type of humanity—a type whose most striking characteristic is enormous activity of brain and nervous system, and expenditure of vital energy through those channels. The decadence in development of the luxurious classes has been ascribed mainly to the unsanitary lives led by ladies—to their physical indolence, for their minds are only too active, their entire neglect of exercise, and their devotion to literature, hours daily being spent on the couch while reading. Then their inordinate indulgence in sweets vitiates the appetite, and, creating dyspepsia, prevents due assimilation of food. It is alleged that certain vices of civilisation, based on dislike to the care of offspring, and copied from the French, have been extensively adopted. I believe it is the opinion of Dr. Da Costa, of Philadelphia, than whom there lives no more scientific or acute observer, that there has recently been a marked improvement in the physique of those American women who, thanks to the public discussion of the subject, have been induced to abandon their bad habits, and to adopt a more hygienically ordered life, and therefrom good effects are actually visible in the development of their children, including the teeth. If this observation can be extensively verified, its obvious importance cannot be over-estimated.

By some writers, who accept its increase as a fact, dental

deterioration has been ascribed entirely to improper and imperfect feeding of children, and some have gone so far as to attribute the defect solely to the use of bread made of bolted flour instead of the whole meal in vogue in earlier times. Against this it must be stated that at no previous period were children of the well-to-do classes in highly civilised states on the whole so well housed, clothed, and cared for hygienically as at the present day. No doubt there are foolish parents who order the dietary of their children unwisely; but, as a rule, young children get an ample supply of nutritive food, and, if there be a failure, it must lie in the assimilative and constructive processes rather than in the chemical constituents of the food. If the teeth were defective owing to insufficiency of proper pabulum during their development, the whole osseous system, which is built up of the same chemical constituents, must in every case be equally badly constructed.

After survey of the whole ground we must admit that on this subject of dental deterioration we have few solid facts. We know that there exist vast numbers of individuals with ill-made teeth and jaws. We know that some hereditary diseases, such as syphilis, which interfere with the due development of all the parts derived from the epiblast, lead also, in many instances, to imperfect formation of the tooth tissues. Beyond these facts, almost the whole subject is still, it must be admitted, in the region of hypothesis; and my object will be fulfilled if I have made this evident, and if I have attracted attention to the difficulties which lie in the way of drawing broad generalisations from the limited data at present alone at our disposal. We must be careful to bear in mind what the instances I have adduced were intended to illustrate—that the climate, food, and social conditions of nations vary in such a way as to make the main problem a very complex and difficult one to solve. We must, above all, guard against that too common error of associating effects with causes merely because they have relation in sequence, but to which they cannot be attributed by strict scientific reasoning, and the incontrovertible facts of physiology. A much greater mass of facts, both numeri-

cally large and so closely observed as to be beyond dispute, must be gathered before any solution is possible. First, we must determine—for, I repeat, we are as yet far from certain—whether organic dental deterioration is really progressing at the present time, and, if so, whether this can be associated with any general or local physical changes. We shall next want to know what are the factors that can possibly go to produce these changes, and then, from sufficient facts, we may perhaps be enabled to draw a sound deduction.

Science is giving to mankind more and more the power to mould his physical future, and we need not fear that this power will be wanting in the case of the teeth, if once the problems are illuminated by the full light of exact knowledge.

In these remarks I have confined myself strictly to the consideration of the question whether organic deterioration of the dental tissues is at the present day on the increase; and this question must not be confounded with the totally separate inquiry, with which, however, it is constantly being mixed up—namely, whether decay of the teeth is at present more prevalent than formerly. We know that structural defect in the dental tissues is a prime factor in the causation of caries; but we also know there are other factors as potent, and that enamel and dentine of sufficient durability under favouring conditions will be destroyed if the agents necessary for their destruction be present in the mouth. We know as a fact that the diseases of our times, unlike those of earlier days, are largely those which give rise to the formation of such agents in the mouth, for many or most of them are either diseases of the digestive organs, or maladies accompanied by disturbance of the functions of digestion, and all these, in a greater or less degree, give rise to morbid conditions of the oral membranes and secretions, to congestion and inflammation of the mucous membrane, to pouring out of unhealthy mucus, to shedding of sodden epithelium, and to an acid state of the saliva. It may well be, therefore, that there is more tooth decay now than formerly, and at the same time by no means a relative increase in organic dental deterioration.

Thus far I have only alluded to the structural defects of the dental tissues, with whose existence we are all so familiar; and it may be well, in approaching more closely the pathology of caries, to remind ourselves of what we know of the exact character of these organic weaknesses. We know that in some few individuals teeth withstand the extremest hard usage and neglect, whilst in others they show traces of decay in earliest childhood, and are destroyed at length in spite of active treatment. Instead of a dense homogeneous mass as hard as quartz, the enamel of such delicate teeth is found on examination comparatively soft, owing to imperfect calcification, and porous in consequence of incomplete coalescence of its elements. It presents a marked fibrous character; the fibres are imperfectly blended; their transverse striæ are clearly evident, and they are often penetrated at their centres by tubes or small cavities. At such places the fibrous character may be lost, the tissue consisting of an imperfectly united granular mass. Defects are often visible and palpable, as in honey-combed teeth and the typical notched teeth of syphilis. The dentine, instead of being good ivory, is soft, and contains here and there throughout patches of granular formation, with spaces full of organic matter unimpregnated with lime salts. Of course it does not by any means always happen that all such structural defects exist together in one tooth; their degree and character vary extremely. It is not uncommon to find in teeth, otherwise fairly well made, one or two pits, or fissures, or patches of defective tissue, whilst in teeth of generally inferior structure there are often portions of still feebler formation. What we would like to know here is what are precisely the processes through which the tooth germ becomes imperfectly developed? We know very little of the prime causes and nothing of the direct influences—the pathological changes by which the effects are brought about. Given, however, structurally defective teeth and the occurrence of vitiation of the secretions of the mouth, and we have two concrete facts which help us in replying to the query: what is caries? And this is a question to which we can now give a very satisfactory answer.

Caries must be defined as a process of disintegration, commencing invariably at the surface and proceeding inwards, affecting dentine more rapidly than enamel, and due entirely to external agencies. We are now positively assured of the truth of these facts; that caries is not an inflammatory change, that it does not depend upon any connection, vascular or nervous, with the rest of the body, and that caries may even occur in an extracted tooth, which is retained in the mouth by artificial means, as on a denture or pivot. We must bear in mind, first, that enamel and dentine are soluble in acids which may be formed in the mouth, and that the structural defects which I have described both furnish lodgment for acid-forming substances, and render those portions of the teeth easily acted upon and destroyed. The active agents in caries are acids and living organisms. The acids, malic, butyric, and acetic, are the products of chemical change and fermentation set up in fragments of organic matter, food, mucus, and epithelial scales, which are commonly present in the mouth. The organisms consist of micrococci, and oval and rod-shaped bacteria, and a fungus called *Leptothrix buccalis*. Acid is also derived from the organisms themselves, for certain kinds of bacteria secrete acid. The solubility of enamel and dentine in acids, not more powerful than would be derived from these sources, can be demonstrated.

(To be continued.)

THE DISORDERS OF PRIMARY DENTITION.

By M. BLANCHEZ,*

HÔPITAL DES ENFANTS MALADES.

THERE is no fact more generally recognised in infantile medicine than the influence exercised by dentition on the general health of children. "A fine child, until it commenced

* From the 'Med. and Surg. Reporter.

to cut its teeth," is not alone a familiar saying ; the experience of the greatest physicians has proved its truthfulness. In all the best works on infantile pathology, both ancient and modern, the influence of dentition is regarded as indisputable. But it must be admitted that this doctrine has been, perhaps, carried too far ; the best clinical observers have been obliged to protest against the assertion of many who would attribute most of the diseases from which children suffer to the influence of dentition. This protest is evident in the works of Rilliet and Barthez, in the clinical lectures of Trousseau, the treatise by Bouchut, and in Dr. West's remarkably practical book. None of these practitioners desire to exaggerate the *rôle* of dentition in the etiology of infantile diseases ; but its influence in this respect is not contested or denied. It is, in fact, an opinion current in medicine since the days of Hippocrates, and confirmed by Sydenham, Haller, Hunter, and the contemporary authors we have already cited. However, certain voices have been lifted against this generally received opinion. After showing that dentition has been accused of producing many disorders not referable to it, which is perfectly true, certain authors have denied that teething has any influence in the production of morbid phenomena.

M. Magitôt, whose authority on any subject connected with the teeth cannot be denied, has particularly combated the commonly received opinion. In his work on the "Disorders attending the Eruption of the Teeth," published in the 'Archives de Médecine,' in 1881, he seeks to prove that dentition has no part in the production of the disorders imputed to it, and that these disorders are merely coincidences. He recalls the opinions of Rosen, Andral, and Trousseau, that great caution should be used regarding the disorders of dentition, an opinion carried much further in the works of the distinguished English Dentist, Mr. Tomes. We will consider, later on, the arguments brought forward by M. Magitôt to sustain his opinions. To commence with, it seems to me useful to consider the question under three principal heads :

1st. Should we admit, in certain cases, the existence of a difficult, laborious dentition, and if so, what are the characteristic signs ?

2nd. Can this difficult dentition induce disorders proper to this condition, and characterised by their nature, course, and duration.

3rd. When a child is teething, should all the maladies which may present themselves be laid to the influence of this physiological act?

These different questions do not appear to me of difficult solution. Dentition is a physiological act, but not necessarily accomplished, on that account, without pathological reaction.

Children who pass through the period of primary dentition without presenting any symptoms of suffering constitute veritable exceptions.

The incisors and the first molars often pierce the gums without provoking any very marked reaction, but the eruption of the second molars, and particularly of the canine teeth, generally causes much more trouble. The phenomena which accompany the eruption of the teeth, have, with reason, been divided into local and general. The most common local phenomenon is salivation, and this is the more remarkable as the buccal mucous membrane in young infants is generally dry, as Dr. West has rightly observed. At the moment when the gums become swollen and the crown of the tooth becomes prominent through the thinned surface of the gum, then the infant constantly drivels, and wets several handkerchiefs in a few hours, which does not happen with a child before the fifth month. This exaggerated secretion of saliva can only be explained by the excitation transmitted to the salivary glands along the mucous membrane of their ducts.

If the irritation is more marked, and the child very impressionable, the hands are carried incessantly to the mouth, and the infant bites at and rubs against the gums any hard object within reach, particularly objects which communicate a sensation of cold. At a more advanced stage of irritation aphthæ are developed and thrush may supervene. The gravest manifestations of the irritation produced by dentition constitute what has been called *odontitis infantum*, characterised by a veritable stomatitis with ulcerations, which may persist so long and determine so much suffering as to give rise

to great anxiety for the life of the child, although West has never observed any case where these disorders actually caused death. In the presence of such symptoms it is difficult to deny the possibility of local disorders induced by dentition. We admit that these grave symptoms are rarely observed, but Trousseau, Guersant, West, Rilliet, and Barthez mention them, and their occurrence cannot be placed in doubt. It is not, however, on this point that the principal objections have been formulated, but against the disorders affecting the general system and imputed to dentition. It is, in effect, impossible to deny, with any appearance of reason, the existence and etiology of the local disorders with which every physician is acquainted; but when we are in presence of disorders such as diarrhœa, skin eruptions, convulsions, fever, &c., which present nothing special, then it is less difficult to deny the influence of dentition, and pretend that the occurrence of these symptoms at this period is a mere coincidence, that these may be observed at any period of infancy, and that they are attributed, without any sufficient proof, to the effect on the general system of the process of teething. Nevertheless, no physician who comes frequently in contact with sick children hesitates in recognising these evidences of constitutional disturbance as due or referable to dentition—not in all cases, but in certain conditions of daily observation.

Reflex sympathetic phenomena are manifested in infancy with peculiar energy, of which we have daily proof; agitation, fever, vomiting, and convulsions are often induced by slight but constant sources of irritation, such as a badly-placed pin or a boil irritated by the contact of dry and hardened dressings. How, then, can it be denied that a continuous pain in a swollen gum, which persists and cannot be relieved, may throw the infant into a condition often exceedingly distressing?

Since the application of a blister or sinapism often determines convulsions in a nervous child, why should the continuous irritation of dentition be incapable of producing the same symptoms?

It is true our opponents seek to establish that this pretended pain of dentition is purely mythical; that there is no reason

why the eruption of the tooth should cause pain, since there is neither effraction nor traumatism, but a very gradual wearing away or absorption of the tissues of the gum. It would then be necessary to prove and demonstrate that the different tissues pushed outward and compressed during the evolution of the tooth do not suffer in any way from this compression, which it would appear exceedingly difficult to admit.

When a vigorous child of from six to eight months, nursed by a healthy mother with excellent milk, is suddenly observed to lose sleep and gaiety, become irritable and quit the breast after a few attempts to nurse, while at the same time it drivels incessantly; when, again, after a careful examination of all the functions, no explanation can be found for this change, except that the gum is hot and painful when touched, it must necessarily be admitted that the process of dentition has caused these disorders. A few days pass, the general malaise persists, or is augmented in intensity; diarrhœa may come on without any change in the habitual diet of the child. No active treatment is instituted, and yet, all of a sudden, the morbid symptoms disappear, and examination of the gum shows that the eruption of the tooth is complete. Can the conclusion, then, be other than that we have already formulated?

This is not a case invented for the occasion, but a fact of daily observation; with some children even the eruption of each tooth or group of teeth is attended by these morbid symptoms.

If these facts are not constantly observed, they are at least common, and it is certainly very rare to find a child who has not suffered more or less during the period of dentition. I have observed, for my part, a child who has never had one of his first twenty teeth without suffering from one or several convulsions, and who has never presented any since the period of dentition.

What we have said of the fever, diarrhœa, and nervous disorders can be repeated with equal justice for the multi-form eruptions frequently observed in similar cases. There is nothing special to distinguish these eruptions, any more

than the intestinal or nervous disorders, from those produced by other and widely different causes. They demonstrate, however, the existence of disorders in the functions of the various organs, and in the secretions, produced by dentition.

What especially characterises these eruptions is the period of their appearance and the manner in which they follow "the evolution of the teeth, preceding and accompanying the eruption of a group of teeth and then disappearing."

If all the morbid symptoms observed during dentition cannot be ascribed to this physiological act, it is not the less true that these disorders, appearing only at this period, accompanying the eruption of the teeth and ceasing when this is accomplished, do not leave in doubt their veritable causation.

It may be admitted that dentition is not an isolated phenomenon; that it coincides with a period of peculiar activity in the development of the child, principally with the formation of the bones, the increase of the glandular system of the digestive apparatus, and that at this moment the nervous sensibility is at its highest pitch.

This is all true, but it is certain that dentition, particularly when painful, has a preponderating rôle in the causation of these morbid manifestations.

After denying that teething can be of itself painful, M. Magitôt demonstrates that traumatisms practised on young animals at the period of dentition, and affecting more or less deeply the gum or the tooth, do not determine anything comparable to the disorders attributed in children to the evolution of the teeth.

We are of opinion that there can be no analogy between the sections, punctures, and tearing of the alveoli in these experiments and the normal evolution of the tooth, which separates, forces out, and slowly compresses the tissues. This last is a purely vital act, not in any manner reproduced in the traumatisms already mentioned, which induce widely different reactions.

In the same way the numerous diseases of the teeth—caries, ulcerations, &c., may often induce very severe pain

without provoking any symptom resembling those observed during the period of the evolution of the teeth. The reactions are peculiar to this period, and are analogous to those observed during the evolution of other organs.

The opinions of M. Magitôt are reproduced in the able and conscientious thesis presented by M. Levêque to the Paris Faculty.

We have particularly considered the seven observations given by M. Levêque, and we find that several might be given as types of the disorders induced by dentition, and the interpretation of them given by the author is, to say the least, extremely farfetched. But these objections do not mar the value of the work; it is possible that the author will persist in his ideas if he practises Dentistry exclusively. But it would be entirely different if he is called upon to follow, in their maladies and indispositions, young infants, to have them under his care during their development, and be obliged to interpret their sufferings. He would then remark, with all clinical observers, that dentition exercises a very marked influence in the production of infantile disorders, and he would soon recognise how solidly the opinion he combats to-day is established.

METALLIC CROWNS.

By Dr. WM. N. MORRISON, of St. Louis, Mo.

ABOUT fourteen years ago I first performed the operation of adjusting gold crowns to crownless teeth, and gave it to the profession, and through them to the public, under the head of "A New Operation." Miss W— came to me with a first left lower molar decayed to the extent that the entire lingual and a greater part of the labial surfaces below the gum were removed. The roots were filled properly with gold, and the crown had been filled several times; the last

time the crown was built up in good style, but the two walls, being of such a shape that the filling could not be made self-retaining, I took a natural tooth, corresponding as nearly as possible in size and shape to its fellow of the opposite side, and embedded its roots in plaster, to make a model from which to get a metallic die, over which to swage a gold cap.

I used a piece of thin gold plate, cutting it at the corners, giving but a slight lap for soldering after it was perfectly fitted to the die. I then fitted this cap accurately to the remaining portion of the tooth in the patient's mouth, allowing it to extend under the free margin of the gum, quite to the alveolus, which was about the thirty-second of an inch below the margin of decay.

After soldering a bar across the cap, from the lingual to the labial surfaces, it was finished and polished at the lathe. I then prepared the patient's mouth as usual for filling, made a thin paste of oxychloride of zinc, filled the cap, and pressed it to its place; the superfluous cement was crowded out of the cap, and removed at the margin of the gum.

I had the pleasure of seeing that tooth to-day, nearly four months after the operation, and had the gratification of seeing and hearing it pronounced a perfect success.

Since that time but very few have availed themselves of the advantage of this, *the grandest invention in operative Dentistry during the last quarter of a century.*

Take, for example, any case where extensive building up is required. A large amount of watchful care, physical outlay, and skill on the part of the operator (acquired only by the few), in conjunction with the most approved, rapid, and painless methods at our command, for welding the improved forms of gold, is necessary to produce the most characteristic and finished result; and this only after a five or six hours' siege over a patient, who has but a small stock of endurance to start with and, in consequence, has grown more restless and irritable each hour. The question is forced upon us, "Did it pay?" Then, when tested by the tooth of time, the thermal changes acting upon the large metallic mass, the walls show checks, stains, and cracks, and finally fall away, leaving unsupported the large, over-malleted nugget, then

we are forced to say with the patient, who refuses to submit to the inquisition again, "It did not pay."

"Too far gone to be filled again, have it out." And as the Dentist (O. S.) dances around, showing the large, well-formed roots in the forceps, the triumph of his skill, he lays the flattering unction to his soul that "dead men tell no tales."

We will all agree that large masses of metal are not the correct thing to be worn in teeth with live pulps at any time, though we are continually trying the experiment to see under how much gold a pulp will drag out a miserable existence. The crowning method comes grandly to our relief in all such cases. The pulps can be saved alive and the tooth made more comfortable and durable than by any other method yet known.

I have been operating upon an entirely different basis for ten years or more. Teeth or roots, so loose that they can be removed with the thumb and finger, I do extract, when I feel they are beyond the hope of successful treatment, but no others.

I hope the day is not far distant when the forceps, extracting screws, gas, and every facilitating medium by which teeth and sound roots are extracted, will be forever laid aside, labelled machines of torture of the past, to be used like the turnkey, only in rare cases at long intervals, and when there will be enacted laws which will make it punishable by fine and imprisonment for the extraction of teeth or roots that are firm in the jaws, or are susceptible of being made so. A patient suffering from pressure upon an exposed pulp in a tooth is not a correct judge of what should be done with it, and a Dentist who accedes to the demands to extract, should be held accountable before the law of mayhem—even more than for the mutilation of any other part of the anatomy, for upon the proper mastication of food all the other parts of the anatomy depend.

I have had cases, pronounced by other operators hopeless, useless, and threatening harm, where I have adjusted crowns which have been worn with great profit to the patient for years; several were unsuccessful attempts at extraction

where the roots had been fractured uncomfortably high up under the gum and of inconvenient shape ; where the restorations have been pronounced marvellous, and they really were satisfactory beyond anything that was expected of them.

Another class of patients for whom this style of operating is particularly desirable, is where chemical abrasion is accompanied by extreme sensitiveness of the dentine, and a nervous dread of instruments ; and chemico-mechanical abrasion where it is extensive, and formidable restorations required. Mr. O. W—, gentleman, about fifty-three years of age, retired merchant, nervous temperament, who in his early years was so occupied in business that he never took any care of his teeth, but had them extracted as soon as they troubled him, resulting in the loss of the molar teeth in lower, and molar and both second bicuspid^s in the superior jaw. The crowns of the remaining teeth were so extensively abraded that the lower incisors were occluding into the upper gum, and the upper bicuspid^s were occluding into the lower gum, pulps alive in all but three. As these teeth had been doing double duty for years, it was necessary to reconstruct them of such material, shape, and proportions as would best fit them for mastication, as well as incisive and enunciative functions.

The six superior stumps were fitted with truncated cone shells of twenty-two carat gold, thickness twenty-eight gauge plate, the small ends fitted tightly to the roots, and the remaining portion planished over a round, pointed stake into proper anatomical shapes and adjusted to each other, and trimmed to the margin of the lips, using the surplus material on the palatine side to increase the masticating face as much as possible. The coronal faces were closed with heavy platinum gold, slightly sunken below the edge, and well thickened with solder on the inside. The bicuspid^s were made without taper, but slightly closed in at cervical margin, to take a firm grasp upon the roots just at the free margin of the gum. Upon the coronal faces of heavy gold were soldered crescent-shaped clippings for cusps to facilitate mastication. The lower bicuspid^s were made similar to upper ; the lower canines were capped with truncated cones with their bases fitted to the tooth about eighth of an inch

from the gum. They were put on in pairs at each sitting with phosphate cement, a small vent-hole being required in several. In the three canals where the pulps were dead, heavy retaining screws were used, the other stumps were not cut or roughened, but merely cleansed with chloroform and well dried. The uneven edges of the lower incisors were levelled with platinum gold foil. From the patient's experience with them, he said that he and the Dentists might live to make a restoration equal to *one* of the other crowns, but they never would live through a *second*.

Mr. J. W—, gentleman, about forty years of age, prominent business man, identified with large capitaled interests, who has for years chewed cigars which are made of the outside sandy leaves of the plants, instead of prepared or medicated tobacco, called chewing tobacco. Ten years ago the upper teeth were worn through the enamel, and so much cupped out that I was obliged to make quite extensive restorations with retaining screws and cohesive gold, all of which remain in good condition to-day, though considerably worn.

The abrasion was only on the right side; by no motion of the jaw could he get the teeth within an eighth of an inch of each other; the lower ones were cupped out until the enamel margins stood sharp—dentine very sensitive; he had deferred consulting me for want of time to devote to it, as he remembered the sittings for former work. He asked me to devise some means of relief for the stretching of his mouth and the long sittings, all of which was accomplished by using thin ribbons of platinum for the bands, so as not to increase the size of the crowns; the coronal faces were made of heavy platinum gold, shod with four half crescents, as described above. With thin phosphate cement, the force of the closing of the jaw was all that was required to make the work complete. I left the empty crowns in position until the cemented ones were secured, and then cemented them.

After the barrel of the crown of 24 carat gold has been fitted to the root and planished into correct anatomical shape, shorter than the finished crown by a sixteenth or eighth of an inch, the swaged coronal end of thin platinum (30 gauge

plate) is slightly stuck to it with solder, 22 carat gold in two or three places, when it is placed upon the plaster model, or in the mouth, and correctly articulated, the thin metal readily yielding to occluding cusps. The lap neatly planished and soldered, thickening the occluding face upon the inside to a sixteenth of an inch or more as required, with little clippings of platinum and plate gold (20 carat) for solder. Where platinum is used for the whole shell of the crown, but little care is required in soldering and filling with 24 carat gold.

Any face of these dies may also be used in swaging metallic sections to protect cement fillings, leaving uncovered those portions of enamel in a healthy condition. The sections should overlap the margins about the thirty-second of an inch, be burnished carefully to them and should have anchorages soldered to its inner surface to secure it to the cement.

In shape, distribution of material, making them thin at the cervical margins, and thick at the cusps, I endeavour to reproduce in metal a copy of nature's enamel.—*Ohio State Journal*.

THE USE OF IRON AND STEEL IN THE MANUFACTURE OF ARTIFICIAL TEETH.

At the June meeting of the Odontological Society Mr. Stevenson brought forward, as a casual communication, the subject of steel springs for Dental purposes; he illustrated the simplicity of their manufacture, and giving it as his opinion that they were lighter and less easily put out of order than gold ones. The idea is not in any way an original one, as steel springs have been made and more or less used during the last twenty years. They were at one time regularly sold at some of the Dental depôts, and I cannot see any reason why they should not still be manufactured and used, not simply on account of their cheapness, but because they are

decidedly purer than many of the metal springs now being worn in thousands of pairs. It must not be forgotten that we have at the present day Dentistry for the poor as well as the rich, and anything calculated to assist our hospital patients should be encouraged. Many years ago I saw several sets of springs made of steel and thickly gilt, supplied by the late Mr. Pratt, that had been in wear for years, and even where the friction rubbed away the gold covering the exposed iron only looked brown and did not do the patient any harm; indeed, as trial springs they were very useful, for every practical man knows how frequently the ordinary gold springs get crippled in the early stages of wear, particularly with patients unfamiliar with Dental appliances. For my part I would sooner put into the mouth a steel spring than some of the inferior ones that are called gold, although to do without them altogether is now the practice with most of the best Dental Surgeons both in London and the country.

The use of iron and steel is much more valuable in the manufacture of artificial teeth than those unacquainted with its uses would believe. In the make of vulcanite pieces its value can hardly be over-rated, more particularly where intervening teeth cause a great strain upon the work. I remember many years ago having a hardened india-rubber upper that defied all our powers to prevent its fracturing. The two centrals were standing, and although strengtheners in gold and in platina were tried, the patient (a powerful man with enormous jaws) bent them over as though they had been made of lead, and vulcanite alone was snapped immediately. In despair a trial was made of a piece of steel plate; it had soldered to it retaining points of gold, and was entirely covered by the india rubber, the specks of gold alone showing its place, and its success remains to this day a wonderful illustration that intrinsic value in a material is not always a recommendation. I should like some of our good mechanics to try strengthening bands made of purified sheet iron or steel, and they will be surprised to find how little action the hardening of the vulcanite has upon them. They should be quite covered in, the retaining points being made of gold or platina. The very best dental alloy is

sooner acted upon by the sulphur than steel, and where care is taken no part of the metal need be exposed. The steel wire spring as exhibited by Mr. Coffin is another revival of an old idea, and no one can say that they have seen any ills resulting from the employment of this base metal in regulating cases, although the irritation in the mouth at such times is considerable. As I have said, let our mechanics try my suggestion and give us their experience.—PHOSPHOR.

Reflections from the Surgery.

EPULIS.

Case reported by F. HENRI WEISS, L.D.S. Eng.,
DENTAL SURGEON TO THE NATIONAL DENTAL HOSPITAL.

J. B—, aged 22, a young lady whose teeth have been under my care during the last three years, experienced when using the toothbrush considerable sensitiveness of the gums about the region of the bicuspid and molars of the right side of the superior maxilla. Attributing it to a little local congestion she applied some eau de Cologne and discontinued the use of the toothbrush for about three weeks. During the interval a mass of tissue formed between the second bicuspid and first molar resembling a raspberry, which bled freely upon the least irritation and was acutely sensitive.

Being anxious to obtain relief she consulted me when I found the condition stated above. Suspecting tartar as the cause, I passed a probe round the necks of the teeth, which, however, only caused pain and hæmorrhage. The teeth on either side were quite free from caries, so I felt most reluctant to remove them. I applied tannic acid, and ordered the growth to be painted with tannic acid and Spt. Vini Rect., one drachm to the ounce twice daily.

I saw the case again at the end of a week, and found more

tissue had formed, but the sensitiveness was less. Fearing a further enlargement would take place I determined to remove it.

Nitrous oxide gas having been administered I proceeded to cut away the outer plate of alveolus from the molar and bicuspid, and with a scalpel thoroughly scraped out the septum of bone between the teeth. To get rid of any further granulations I applied the actual cautery freely.

After consciousness had been restored I was obliged to plug the cavity with lint and perchloride of iron to arrest the excessive hæmorrhage which followed. Two days later I removed the lint and syringed the part with dilute Condyl's fluid. The plug of lint had exposed the whole surface to view, and there did not appear to be any recurrence of the growth.

A week elapsed before I had an opportunity of continuing the treatment, and to my disappointment I discovered tissue resembling the original tumour growing from the surface where I had removed the septum. I applied fuming nitric acid and directed the mouth to be washed with Condyl's fluid. There had been considerable pain, and as the patient was very anæmic I prescribed *Ferri et Quiniæ Citras*, gr. x, twice daily for a week.

Four days later I found the part where the nitric acid had been applied was still growing, so I treated it with caustic potassa and repeated the application twice on succeeding visits.

From that time healthy granulation formed, and, with the exception of a little purulent pus coming away, there was no sign of the tumour returning. In eight weeks after the operation the cavity was full of healthy gum, the only mark of the original trouble being a slight depression and an absence of alveolus on the molar and bicuspid teeth on either side.

British Journal of Dental Science.

LONDON, OCTOBER 16, 1882.

Now that the Act of 1878 compels every man seeking registration to hold a qualification, Dental education will be in the ascendant, and we have no fear as to its ultimate standard. Our Dental schools are so well organised, and there is so manifest a desire to impart high-class knowledge by the members of the staff, that it will be difficult for any one to pass through the course of study laid down without being proficient in his art. Are we right in speaking only of those who will become the Dentists of the future? Are those who have borne the toil of twenty years' practice to be considered so well established that no mention need be made of them?

There is much that really needs consideration before the Dentist of the present day can be said to occupy his true position. To begin with, every means should be adopted by which professional intercourse should be encouraged—both socially and scientifically. True, the Odontological Society and the British Dental Association exist, but do they represent the Dental profession as a whole? They may in sentiment but certainly not in numbers. In the address of the late President of the British Dental Association much stress was put upon the want of energy displayed by its members, and, to use his own words, "Of all our enemies, however, the one we have most to fear is apathy in our own ranks;" and if such words can be justly addressed to its own members, what are we to say of the whole body of Dentists? Why, that we must blush to think that such apathy exists! Would medicine and surgery be what they are if its members had been likewise apathetic? No, they owe their present position to the untiring efforts of individual men. In the inaugural address of Mr. Marcus Beck, delivered at the

University College, the origin and development of medicine and surgery is very clearly given, and we should recommend our readers to peruse it at their leisure. Dentistry, like all other sciences, had its remote origin, but its educational era may be said to have commenced twenty-five years ago, and with the impetus given by such men as Tomes, Rymer, and others, it behoves every man to follow up their efforts and to consider it his duty to uphold the institutions now identified with our best interests.

As we have said, our schools are doing good work, and are well supported both by the profession and the public, but the Odontological Society and the British Dental Association require additional members to make them truly representative bodies. The fact before us is that only one fifth of the registered Dentists are members of these institutions, and we wish this numerical arrangement could be reversed. We have in the Odontological Society all that could be desired for the encouragement of scientific research, and were there a larger number of members there would be a greater amount of original matter brought forward at its meetings, the discussions would be fuller, and the bond of brotherly feeling throughout the country would be more closely wrought.

Backed up by the Dentists Act, the British Dental Association deals with professional ethics, and we can hardly wonder at it adopting measures which are contrary to the general feeling of the profession, if it does not represent itself by one and all becoming members and exercising their vote.

MESSRS. CHURCHILL, of 11, New Burlington Street, London, kindly invite all those licentiates in Dental Surgery who have not received and filled in the annual circular of the 'Medical Directory' to write immediately for the same. We trust our readers will not only comply with this request, but will also subscribe for a copy.

The great increase in size of this valuable work of reference has prompted the proprietors on more than one occasion to exclude the list of licentiates in Dental Surgery from its

pages, but an urgent request having been made to them they have not done so. We cannot too forcibly impress upon our readers the necessity of subscribing, which may be best done through the depôts, as the great expense in getting up a book of this character justifies the proprietors in taking such a course unless they are well supported.

Manipulative Miscellany.

All instruments or articles wished to be described under this heading are requested to be sent *for inspection* to the publishers not later than the 8th and 23rd of each month, they can be returned in a few days. Where, from the size or otherwise, this is impracticable, a clear and minute description will be sufficient; the sole object being to give practitioners a description of everything new, on its own merits, and without any intention or wish to pit one against another. All makers, vendors, and inventors, are invited, with strict impartiality, to contribute towards this end.

A NEW MELTING STOVE.

ZINC, lead, and tin are so frequently required in the work-room that a good melting stove is always an acquisition. The Dental Manufacturing Company have introduced one somewhat after Fletcher's well-known pattern. It consists of a circular sheet-iron jacket of ten inches in diameter, with a hinged cover, in the centre of which there is a draft hole; standing nearly eighteen inches high it forms a substantial stove, not easily over-turned. The gas arrangements are simple and effective. From a point, two inches from the inferior margin, a tube is inserted, two inches and a half in diameter, which is continued to the other side of the jacket. From the superior surface, equal to the middle of the jacket, is a round burner, covered with coarse gauze. The gas is supplied by a brass pipe, which is held by arms at the external end of the large tube, with large openings on either side to admit a free current of air to accompany the gas.

The great feature in the stove has yet to be described. It consists of an arrangement by which a current of air is drawn up by the side of the flame somewhat after Silber's patent. On the side of the jacket where the large tube is inserted, and just above it, is a shutter through which air can pass at will, and this communicates with a double layer of sheet iron separated from one another by an interval of half an inch. It becomes obvious that when the burner is lighted and the cover put down the current of air drawn through the side shutter mixes with the flame and produces heat of great intensity. We notice one peculiarity. When the cover is put over *suddenly* the flame goes out, some future modifications may prevent it.

ASH AND SONS' PHOSPHORIC ROCK CEMENT IN GLASS TUBES.

It has long been felt that a means should be adopted by which the phosphoric acid used in this and similar white paste stoppings could retain its virtue, so many instances having occurred where after it had been in use a few weeks it became quite useless. Messrs. Ash and Sons are supplying both the liquid and powder in separate glass tubes, holding just sufficient for two or three fillings, which we think is a great desideratum. A variety of shades are manufactured which give a ready means of matching the surrounding tooth structures. The directions they give to open the tubes is simply to scratch the ends with a file and they will break off clear, and should the fluid be crystallised it will dissolve by warming it over a spirit lamp. Should the setting be too quick continue the heating until it nearly boils.

AN IMPROVED LATHE HEAD.

MR. JOSIAH RITCHIE has designed a novel form of lathe head which promises to resist wear and give a steadiness hitherto unattained. Instead of working upon the ordinary bearings it revolves upon two cones, and by means of double

screw washers they are held in close proximity to the standards, any looseness being rectified by tightening the washers. To describe it more fully we must state that the right-hand cone forms part of the spindle and revolves with it, the left-hand one slides on the spindle in a groove, we have, therefore, both cones in the standards. To fix them for working the double washers are screwed on the left-hand end of the spindle and carried tightly up to the cone of that side. Three corundum wheels can be worked at the same time on the right side, and a tapered screw is on the left for a polishing brush. There is also an additional chuck for drills. The stand for carrying the lathe head is higher than those usually made, and it has a heavy driving wheel to facilitate its working.

A NEW MIRROR.

DR. C. H. STOKES has invented a mirror which, in some instances, will prove extremely useful. Starting from a tapered handle is a thick wire bent to the shape of a sickle, into the end of which is elaced a circular mirror which revolves. This declining to an angle of about twenty degrees gives a great variety of positions. The object of the curved wire is to prevent the corner of the mouth being cut when the back teeth are being attended to. At the extreme end of the mirror is added a comb which will enable the operator to hold back the napkin or coffer dam. Should the glass move too easily there is a screw by which it can be tightened. Messrs. Ash and Sons have brought this little contrivance under our notice.

ALL Dental students who have attended the Middlesex Hospital will hear with deep regret of the death of Mr. Robert Wishart Lyell, M.D., F.R.C.S., which took place on Monday the 2nd inst.

Review.

MECHANICAL DENTISTRY.*

No better evidence can be afforded of the interest taken in any book than its sale, and when a work, professedly written to instruct more particularly the student, runs through its first edition and appears a second time revised, with additions, we can hardly question its usefulness. There cannot be a doubt that Mr. Hunter thoroughly understands the subject he writes about, but that of itself is hardly sufficient when describing practical matters or endeavouring to show the uses of complicated pieces of apparatus. Nothing can be clearer than Mr. Hunter's style, and although a great deal of the book deals with the experience of other men, the author is to be praised for the manner in which he has sifted their information and brought it into something like practical form. This second edition is certainly an improvement upon the first, as several alterations have been made in the text, although only one new subject has apparently been rewritten, the chapter upon Celluloid, and it is to this chapter we would more particularly direct attention.

Although celluloid has been before the profession in one form or another since 1859, it cannot yet be considered a thoroughly reliable base for artificial teeth; even Mr. Gartrell, who has had considerable experience, says "that it should be used with discrimination." How can the Dentist ascertain when he is constructing a denture whether he is making it for a dirty or a clean patient? Yet we hear that in the one case we shall have failure and in the other success. Every practical man must allow that this material should not be used in partial pieces or over roots, and that it will not stand the wear and tear of mastication. Even its beautiful colour soon disappears, more particularly in the mouth of the smoker, and we consider it can never supersede rubber

* 'Mechanical Dentistry.' By Charles Hunter. Crosby Lockwood & Co.

altogether. Late experiments have proved that oil or glycerine, or even steam, is injurious to the texture of the material ; and certainly the best results appear to be obtained by the New Mode Heater of Dr. Campbell in which no moisture is used. Mr. Gartrell some time ago introduced an injecting apparatus by which, at a certain temperature, the celluloid was intended to be driven into the mould. In our hands the process has been singularly unfortunate, and as no celluloid in the form of rods are obtainable, we jump to the conclusion that the company do not favorably entertain this idea.

There is hardly a chapter in the whole book which will not repay careful perusal even by those who have had a fair amount of practice, and some matters, such as the manufacture of gold in various qualities, might be copied and hung in the workroom as a memorandum. The same remark applies to the table showing the proportion of alloy to be added to standard or to fine gold in making the various qualities. Another very useful table is that giving the weights of pieces of gold of the same size but of different carat value, showing that a piece of 18-carat gold that weighed $17\frac{1}{2}$ dwts. would if only 9-carat weigh but $13\frac{1}{2}$ dwts. We would also call attention to the chapter on Electro Gilding, for as solder is generally employed of an inferior quality to the gold body plate uniformity of colour can only be secured by this process, and we cannot find fault with the electro-gilding of all metals going into the mouth so long as the patients are aware that the work is only gilt. Throughout Mr. Hunter's book is well illustrated, and after a careful perusal we can recommend it as a digest of the most important processes occurring under the observation of the mechanical Dentist.

Literary Notices and Selections.

CASE OF VERY COMPLETELY OSSIFIED SARCOMA OF THE LOWER JAW: REMOVAL: RECURRENCE: TWO OPERATIONS: SUBSEQUENT RECURRENCE: AND DEATH FROM EXHAUSTION.

Under the care of Mr. CHRISTOPHER HEATH, F.R.C.S.,
SURGEON TO UNIVERSITY COLLEGE HOSPITAL.

W. G—, æt. 50, was admitted on May 9th, 1881. About five months previously he noticed a pricking pain about the left side of the lower jaw, and soon a lump appeared outside the bicuspid teeth; it grew steadily but slowly until one month before admission. At this time the patient had several teeth extracted, and the increase in the size of the growth became rapid after this interference; there was constant gnawing pain. The patient believed exposure to cold to have been the cause of the swelling. Both his parents died of "old age," and had no kind of tumour.

On admission the lower part of the left cheek was bulged outwards considerably by a very hard rounded swelling, which covered the outer side of the left half of the lower jaw from a short distance in front of the angle almost to the left canine; the lower edge of the bone was concealed by slight projection of the mass below it; and on pressing upwards in the submaxillary region a considerable swelling could be felt on the inner side of the bone. Altogether the impression conveyed by the fingers was that the growth was central, and that the so-called expansion of bone had occurred over it. No teeth were present on the left side behind the canine, the alveolus was widened, and presented posteriorly several low, rounded swellings, covered by mucous membrane, soft or even cystic; whilst in front lay a large crater-like ulcer, at the bottom of which no bone was bare. The tongue and floor of the mouth were normal. A small not tender gland could be felt behind the angle of the

jaw. There was moderate constant pain in the part, much increased by hanging the head down. As regards general health there was nothing to be desired.

On May 11th ether was given, and the growth removed by an incision from the left angle to the symphysis; the jaw was sawn through to the left of the symphysis, the soft parts stripped from the growth, and then the bone was divided near the angle. The wound was closed by wire sutures, and dressed with cotton wool.

On the second evening the patient's temperature was 102.6° , and on the third 103° ; till the eighth it was 100° to 100.6° . Slight œdema of the cheek and eyelids appeared on the third day, but soon subsided. The wound was all but healed on the eighth, quite so on the twentieth, when the man left hospital feeling quite well.

The growth was smooth on the surface, and covered by a thin layer of fibrous tissue; it was subperiosteal, not central, and on the inner side of the jaw lay two long oval masses, parallel to the mylo-hyoid ridge—one above, one below it. A section of the large outer mass showed it to consist of solid bone, much denser than ordinary cancellous tissue, surrounded by a margin of soft greyish-yellow tissue, nowhere more than a quarter of an inch thick. Vertical striation was plain in this border, and was in part due to spicules of bone. On the alveolar border was a layer of similar soft growth, one third to half an inch thick. Microscopically the growth consisted of rather large round and polygonal cells, surrounded by bands of spindle cells, and tracts of fairly developed connective tissue; so that to the naked eye a section, seen by transmitted light, was made up of distinct lobules. The above description refers to the thin soft layer on the surface, and even in its substance dots of bone were numerous; whilst at its base lay a large mass of deep yellow bone, fairly dense, having large lacunæ and ill-developed canaliculi; tumour cells occupied the cancellous spaces.

Soon after leaving hospital the patient's face swelled a good deal, and it was thought that recurrence of the growth had occurred; but a sequestrum worked out, and

the swelling subsided. In three months, however, he was readmitted, having had a distinct recurrence for six weeks, with much constant pain. His health was still very good.

On September 6th, 1881, the left side of the face was now swollen from two inches below the line of the jaw to above the level of the ala nasi, and from the symphysis to the lower end of the ramus of the jaw. On looking into the mouth, two large firm masses of growth were found—one above the old scar, lying in the cheek, and running back almost to the anterior pillar of the fauces; the other, below the scar, occupied the floor of the mouth. They were separated by a deep groove, at the bottom of which was a little ulceration; elsewhere, the surfaces of the growths were slightly lobulated and covered by mucous membrane.

No large glands were felt. On the following day the whole of this mass, together with the ramus, coronoid process, and condyle of the jaw, were removed by the ordinary incision for the removal of half the lower jaw.

The patient again recovered, without any bad symptoms; his temperature rose to between 100° and 101° four times only. The hinder part of the wound gaped widely, but it was healing steadily, and there was no obvious recurrence on October 8th, when the patient left the hospital.

The left angle and ramus of the jaw were surrounded on all sides by masses of new growth, in which there was very little bone, as far up as the base of the coronoid process. In the mass which lay below the scar, unconnected with the jaw, there was a large proportion of bone. Microscopically, the growth was very similar to the primary one; there was less division into lobules, and the cells were, perhaps, smaller; the bits of bone seen were much less perfect.

On January 30th, 1882, the patient was again admitted, having noticed a recurrence of the growth two months. The left cheek was now enormously swollen, and the angle of the mouth pushed forwards by a mass of new growth, fungating into the mouth along the line of the jaw, but elsewhere covered by mucous membrane. The old wound was healed, but for an ulcer an inch and a half by half an inch, round which there was a good deal of firm infiltration at its

posterior end. The growth was firm and elastic at some points, bony at others, adherent to the symphysis, but not very firmly. The whole face was œdematous; the left temporal fossa rather full, and the seat of much pain. The man was still pretty strong.

On February 2nd the old incision was opened up, and the main part of the growth turned out. As the skin was stripped up, the hair-bulbs could be seen springing out of the tumour; then a piece in the floor, on either side of the frænum, was removed, and the two ranine arteries cut and tied. When the tongue had been drawn forwards by a string, the symphysis was removed to just beyond the right canine tooth; and, finally, an attempt was made to remove the posterior end of the tumour; but, as it here seemed to involve the tonsil and carotid vessels, and to spread into the temporal fossa, much had to be left.

Again the patient made a good recovery, his evening temperature for the first week being between 100° and 101°. The anterior part of the wound healed, but the posterior gaped widely, and he went out with a large hole here. Pain in the temporal region continued. He died at home on April 5th, having been able to walk up and downstairs to the last. The total duration of the disease would, therefore, seem to have been about seventeen months. A section from the second recurrence was more densely round-celled than either of the preceding specimens; slight traces of lobulation remained, and there was a large amount of rudimentary bone. Throughout, the vessel-walls were formed by cells of the new growth.

RANULA OCCUPYING THE WHOLE OF FLOOR OF THE
MOUTH—RESECTION OF PART OF WALL—PLUGGING
WITH LINT—CURE.

(Under the care of Mr. MORRIS, M.A., F.R.C.S.,
SURGEON TO MIDDLESEX HOSPITAL.)

ON October 15th, 1874, Matilda L—, aged 40, a married woman, residing at Herne Hill, applied at the Cancer Out-

Patient Department for an affection of the mouth which she had been given to understand was a cancer. On opening her mouth the first appearance gave the impression of a large tongue tied down to the floor of the buccal cavity in front, but which, owing to œdema, was bulging above the level of the lower teeth. On looking further into the mouth, however, the tongue itself was seen pushed upwards and backwards by a large mass, to which the tongue looked but as a small flap-like appendage. The tongue could be protruded out of the mouth at will. The mass, which proved to be an ordinary ranula of extraordinary size, had first shown itself ten months ago as a small bladder-like enlargement on one side of the frænum. This had continued to grow up to the time of her application to the hospital. At this time it occupied the whole floor of the mouth, pressed backwards the tongue, and reached higher than the teeth level; it was soft, but not fluctuating, and at one spot on the left side the surface of the mucous membrane was broken. This destruction of mucous membrane was such as might have been caused by the puncture of a nævus-needle, the edges of which puncture had subsequently ulcerated. There was no induration or tendency to fungate about them. There was no enlargement or hardening of the submaxillary or lingual glands, nor any of the cervical lymphatic glands. The swelling gave no pain, but caused much discomfort by its size. A cut was made into it with blunt-pointed scissors, and after the contents were evacuated a small square-shaped piece of the wall of the cavity was cut away. The cavity was then stuffed with several long narrow slips of lint, some three or four of which were soaked in the tincture of the muriate of iron. The contents were of the usual glairy character, but somewhat pale; they looked exactly like the white of egg, and measured one fluid ounce. On heating a little, the whole of the heated portion was converted into a solid mass. After cutting away the fragment of the cyst-wall, some slight hæmorrhage followed, which soon subsided before the plugging was commenced.

October 23rd.—Teeth quite black from use of tincture of iron. A large granulating cavity in floor of mouth, with

spacious quadrilateral aperture, through which patient can stuff large flakes of cotton wool into the cavity.

The cure was uninterrupted. The cavity closed by granulating and subsequently contracting.—*Medical Times and Gazette.*

DEATHS UNDER CHLOROFORM.

AN inquest was held by Mr. Langham at St. Bartholomew's Hospital, on the 2nd inst., on the body of James Butterworth, æt. 32, who died in that institution while chloroform was being administered to him in order to permit of the reduction of a complicated fracture of the lower jaw. The deceased had received the injuries during a scuffle in which he was involved while at Barnet Fair. Mr. Ernest Clarke, house-surgeon, saw Butterworth on his admission, and found that he was suffering from multiple fracture of the jaw; a portion of the jaw was loose. To put the jaw right, an operation was necessary, and Mr. Gill administered chloroform; but the patient died before he could be operated upon. A post-mortem examination was held, and it was found that deceased's jaw was broken in two places. The trachea contained a considerable quantity of blood; the larynx was much bruised, and in parts swollen. There was a large amount of extravasation into the muscles at the root of the tongue. Death appears to have been due to a gradual asphyxia, due primarily to the injuries and extravasations above described. The jury returned a verdict of "Manslaughter" against the man who was accused of having inflicted the injuries.

Mr. Collier, deputy-coroner for East Middlesex, held an inquest last week on the body of Mr. Francis Mellish de Putron, aged 58, builder, of Silvertown, who died under the influence of chloroform on September 4th. Mr. E. V. F. de Putron stated that the deceased was his father, and he was suffering from cancer on the tongue. He attended the London Hospital for the purpose of undergoing an operation.

The father of the deceased died from cancer in the jaw. Mr. Basil W. Walker, house-surgeon at the London Hospital, stated that the deceased was admitted on August 16th suffering from cancer of the tongue, and it was decided that, with the consent of the deceased, an operation should be performed. On September 4th chloroform was administered to him by witness, and it was not considered necessary to examine his heart. While the deceased was brought under the influence of the chloroform he struggled, which was usual with persons when it was administered. The pulse then stopped, the deceased became livid in the face, and he commenced gasping. Restoration was tried, but without effect, and the operation was not commenced. Death ensued between five and ten minutes from the time the chloroform was first administered. The cause of death was failure of the heart's action, and this opinion was confirmed by a post-mortem examination which was afterwards held on the body. It was decided, after a consultation, that in order to save the life of the deceased, it was necessary to perform the operation. The jury then returned a verdict, "That deceased died from failure of the heart's action while being brought under the influence of chloroform previously to performing an operation, and that death was caused by misadventure."—*British Medical Journal*.

CALCIUM PHOSPHATE AS A ROOT FILLING.

By Dr. U. SMITH.

THE treatment of root canals is one of the most delicate and important operations pertaining to Dentistry: delicate, because it is necessary to know what remedies, and to what extent they can be applied to them, without injury to the dentine; important, because upon the vitality of the roots depends the permanence of the teeth after the crown cavities are well filled. In fact, upon vitalised roots depends the per-

manence of good crown operations. After the nerve pulp is removed and the canal is dried by the use of absorbents, the practitioner proceeds to fill either with gold or some other material, until the entire length of the canal is, or is supposed to be, thoroughly stopped.

Now the question is, "Can root canals always be filled from apex to crown successfully in the usual way?" My experience convinces me that a large proportion cannot be satisfactorily filled, nor can the pulps be entirely removed. The teeth of one canal root are favorably situated, and are more easily operated on, therefore the usual method should be invariably successful. But the teeth of two and three roots, each root containing a branch of the nerve pulp, are not so easily reached, nor so easily probed. It is often necessary to reach these canals through posterior openings; the pulp of one root may be successfully extirpated, while the others in the same tooth cannot be reached, or are too small to admit the finest barbed broach. Then what is to be done? In such cases the operator says to himself, "I have done all that I can do; if there is any dead nerve pulp remaining it must stay," and goes ahead, dries out the cavity as well as possible, and fills from bottom to surface, polishes the surface, if of gold, to a mirror brightness; the patient pronounces it splendid, pays his bill, and all goes on merry as a marriage bell for a while. Sooner or later the dead matter left in the roots gets up an irritation—a war with adjoining tissue—no ease or peace until it has made its egress, somehow and somewhere.

Now can this difficulty be avoided? In a word, can branches or parts thereof of dead nerve pulps be left in the roots without detriment? My practice in such cases is—and it extends over a period of more than twenty years—when I have removed all accessible pulp and some unavoidably remains, I dry the cavity as well as I can, even using the hot-air syringe, then I introduce into the roots calcium phosphate, all I possibly can get in, up even to the crown cavity; cap with tin foil or with prepared gutta percha, then proceed with crown filling as usual. In this manner I have invariably met with success. In fact, I usually fill roots, when an

amalgam filling is intended, with calcium phosphate, even after I know that all the pulp is removed, when so situated that it can be introduced. In all cases where I cannot remove all the dead pulp, I have recourse to calcium phosphate, whether the crown fillings are to be of gold or other material. Calcium phosphate is compatible with tooth structure, antiseptic in its nature, therefore a neutraliser of dead matter ; is a promoter of vitality, and is found in every tissue and secretion of the animal economy.—*Ohio State Journal*.

THE BEHAVIOUR OF PLASTER OF PARIS.

I HAVE found that in its properties, and consequently in its behaviour, plaster of Paris varies according to the degree of fineness to which it is ground, the degree of its calcination, and the manner of mixing and using it.

As plaster is generally used, the casts made of it expand and sometimes warp, causing great inconvenience. This, however, can be entirely overcome, and actual shrinkage of the cast secured against, by the careful selection and proper manipulation of the plaster. Other things being equal, a coarse plaster expands more, but makes a harder cast than the finer grades. Increasing the degree of calcination hastens the setting and increases its tendency to expand.

Thorough mixing renders the cast less liable to warp, secures uniform hardness, and hastens setting. Very thin mixing aids in controlling expansion, but it retards setting, and the cast never becomes very hard. Mixing the plaster with warm water hastens setting, and thereby lessens the liability to expansion. Mixing a pinch of common salt with the plaster also hastens the hardening process, and thereby lessens expansion.

Packing the surface of the cast while setting causes uneven expansion and consequent warping. Wetting the cast before

the setting process is completed increases its tendency to expand.

To secure accurate impressions or casts, select or prepare plaster to meet the requirements of the case. Mix well and get into place before it begins to harden. Avoid packing or wetting during the process of setting. If necessary (to prevent expansion), use warm water and salt; mix as thin as is consistent with the hardness required and convenience in use.

Samples of plaster cast on a straight, stiff square, or tri-square, marked off into small fractions of an inch, will indicate the warpage and give the actual measurement of the expansion or shrinkage; and counter-casts, marked or notched, furnish similar tests.—GEO. A. FOWLER, D.D.S.—*Dental Cosmos*.

HÆMORRHAGE AND GANGRENE FROM A CARIOUS TOOTH.

IN the St. Louis 'Medical and Surgical Journal,' Dr. William A. Byrd reports the following case:—He was called to see a boy between seven and eight years of age who was suffering from gangrene of the left side of the face and neck, accompanied with severe hæmorrhage. The child was very anæmic, with the left side of the face swollen, with an opening that would admit the point of a finger opposite the submaxillary gland, another in the meatus auditorius, and another in the mouth opposite to the outside of the first molar tooth; from all these openings was flowing a dark, very offensive fluid, mixed with arterial blood, and also shreds of gangrenous connective tissue protruded from them. For some weeks the child had suffered from an offensive discharge from the left ear; and about two weeks before I saw him the first left molar tooth commenced aching and the jaw to swell. Subsequently a black spot appeared opposite the tooth, and at this spot the skin gave way,

giving vent to a dark, very offensive discharge. The swelling from the ear and the tooth coalesced, and the abscess broke into the ear and mouth, causing a profuse discharge from each. In a day or two blood was freely discharged from all three openings. The patient was etherised, and it was discovered that the bleeding came from so many points that it would be impracticable to secure all of them without too great a loss of blood and shock to the patient. It was therefore decided to ligate the common carotid, which was done with catgut. Through the incision a great quantity of gangrenous matter was removed as high as above the zygoma and down nearly to the clavicle. The cavity was carefully washed out with a solution of boracic acid, and packed with oakum soaked in eucalyptol and vaseline. He rallied well and seemed brighter, but sank again, and died on the second day. Dr. Byrd thinks that the carious tooth was the origin of the trouble, and that if it had been attended to in time the result would most likely have been different.—*American Journal of Dental Science.*

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The editor thanks those who have already subscribed to help this widow and family, and trust about £10 or £12 may be promptly added. This further amount may enable the object in view (to place her in a retail business) to be carried out on a very small scale, whilst any amounts sent afterward would augment stock.

Subscriptions will still be received by Messrs. C. Ash & Sons, the Dental Manufacturing Company, Mr. Rutterford, Messrs. Jamieson, and the editor of this Journal.

MR. COOKE'S SCHOOL OF ANATOMY.

EACH year reveals the fact that a higher standard of education is necessary to enable a man to compete successfully with the world. With the continuous unravelling of the mysteries of nature which modern scientists are working hard at, with the means at our command to gather in the works and thoughts of the whole world almost as soon as they are created with the bewildering activity of every branch of life, the brain of man is put to a severe test. Is our present mode of life fitted for such a task? Are we by our present mental training preparing a brain which in succeeding generations will be able to grasp subjects more readily than we are at present, or is there a strain being put upon our nervous system which will in time lead to sad results? It is becoming a practice to divide each branch of science into parts. Formerly the surgeon was an all-round man, now we have many who devote their attention to special diseases—and the same stands good with medicine and the law. Where we have no distinct limit to the subject danger may be fraught. The strict specialist will frequently look through his own coloured glasses with misleading consequences. The question before us is what must be known and how is it best attained.

The addresses delivered at the different medical schools to inaugurate the new year offer some very valuable hints to the student, and much advantage will be gained if they are carefully read. We have often pointed out that there are some who are quite unable to fit themselves for examination under the ordinary routine teaching, they are obliged, therefore, to obtain special instruction, and Mr. Cooke has offered for some years past that special instruction. He has conscientiously avoided everything like opposition to the medical colleges; his aim is to co-operate with them, and to see that all who may practise surgery are masters of the subject. He takes his class, which generally numbers between thirty and fifty,

over the subjects which will be dealt with at the coming examinations, and with great pains questions and cross-questions each member, never leaving them until every point is made clear. Having attended several lectures, we asked Mr. Cooke whether we might make special mention of his classes to our readers, as we considered it would be an incalculable boon to the Dental student. He gave his permission provided we did not make it appear as a commercial advertisement, and we trust our censors will accept this disclaimer. The Dental student has to attend the full course of lectures on anatomy, physiology, and surgery at the general hospitals, and we cannot too strongly urge him to pay undivided attention to each, for he never knows when such knowledge will be useful. The times show that the future Dental Surgeon will be a highly educated man and hold an esteemed social position. Taking this into consideration it will be well for him to obtain during his student career a thorough insight into his art, and where he finds he lacks proficiency seek it by special instruction. In our conversation with Mr. Cooke he said arrangements might be made for a class of Dental students who were carrying out the curriculum, when he would be able to take the portions of anatomy, physiology, and surgery which are so important to those practising our speciality, at hours which would not clash with their other lectures, whilst it will be of incalculable value as a source of help to those gentlemen who are, or contemplate, studying for the diploma *sine curriculum*.

MONTHLY REPORT OF CASES TREATED AT THE DENTAL HOSPITAL OF LONDON,

FROM SEPTEMBER 1ST TO SEPTEMBER 30TH, 1882.

Extractions	{ Children under 14	601
	{ Adults	887
	{ Under Nitrous Oxide	457
Gold Stoppings.....		125
White Foil ditto		2
Plastic ditto.....		470
Irregularities of the Teeth treated mechanically.....		53
Miscellaneous Cases.....		424
Advice Cases.....		219

Total..... 3238

W. F. CORNELIUS,
House Surgeon pro tem.

MONTHLY REPORT OF CASES TREATED AT THE NATIONAL DENTAL HOSPITAL,

FROM SEPTEMBER 1ST TO SEPTEMBER 30TH, 1882.

Number of Patients attended 1617

Extractions	{ Children under 14.....	378
	{ Adults.....	753
	{ Under Nitrous Oxide	74
Gold Stoppings		56
Sheets of Gold used, independent of Pellets.....		36
Other Stoppings		267
Advice and Scaling		105
Irregularities of the Teeth		66
Miscellaneous.....		114

Total 1813

FRED. WM. BATE,
House Surgeon pro tem.

QUARTERLY REPORT OF CASES TREATED AT THE DENTAL HOSPITAL OF EXETER,

FROM JULY 1ST TO SEPTEMBER 30TH, 1882.

Extractions	{ Children under 14.....	339
	{ Adults	816
	{ Under Nitrous Oxide and Ether.....	52
Stoppings	{ With Gold.....	18
	{ „ White Foil	11
	{ „ Plastic Material	155
Miscellaneous (Irregularities of the Teeth, Scaling, &c.).....		159

Total..... 1550

HENRY B. MASON,
Hon. Sec.

Obituary.

JOSEPH THOMAS CLOVER, F.R.C.S., L.S.A.

It is with deep regret we have to record the death of Mr. J. T. Clover, which took place on the 27th ultimo at his residence in Cavendish Place.

He was born at Aylsham, Norfolk, in 1825, and was educated at Guy's Priory, Norfolk. After two years' practice as dresser at the Norfolk and Norwich Hospital he came to London, and commenced his studies at the University College, where he exhibited great ability; but the malady which more or less marred his working in after life began to show itself, and probably prevented him from competing for high honours. Mr. Syme, who was then surgeon to that hospital, took a great interest in him; and after having held the post of house surgeon, such was Mr. Syme's confidence in his capabilities that he offered him the similar position at the Royal Infirmary, Edinburgh, which he refused, being anxious to comply with the wish of the medical committee of the University College to become the resident medical officer. During the five years he held this position the cholera epidemic of 1849 occurred, which taxed to the utmost the courage and endurance of all the hospital residents. A short but brilliant career gave the promise that he would reach the highest position amongst the leading surgeons of the day, but recurring illness obliged him by degrees to relinquish ordinary practice, and to restrict him, most unwillingly, to the administration of anæsthetics. He was probably present when ether was first administered, which opened the new era in surgery. Mr. Clover took a prominent part in the development of this discovery.

His researches on the use and administration of nitrous oxide gas brought him prominently before the Dental

profession some twelve years ago, and since then his aim in life has been to obtain the best means by which anæsthetics may be administered with the least possible risk to life and inconvenience to the patient. Mr. Clover possessed exceptional qualifications, added to a well-cultured mind in medical and surgical knowledge he had great mechanical ingenuity; where science pointed to the usefulness of an agent he found the practical means of employing it. The various pieces of apparatus which bear his name show with what care he associated mechanics with physiological laws. Among his numerous inventions he devised a method by which the vapour of chloroform being received into a portable bag attached to the inhaling apparatus was mixed with regulated quantities of air, so that this, or any other anæsthetic could be administered with any degree of dilution with the utmost exactness. Those contrivances which are used in the administration of nitrous oxide gas are so well known that we need not enumerate them here. His fruitful mind originated the idea of administering ether and nitrous oxide gas in a mixed state, which produced the full effects of the former anæsthetic without much of its unpleasantness. By an ingenious tap, one, the other, or both were conveyed to the patient in defined quantities. Nitrous oxide gas being turned on first, the patient became partially insensible before the irritating ether fumes were inhaled. His apparatus for washing out the bladder has proved invaluable in the operation of lithotomy.

As a member of most of the learned societies, and as administrator of anæsthetics to the London Dental Hospital, to most of the eminent surgeons, and lecturer on anæsthetics at the University College Hospital, he formed a large circle of friends—possessing, as he did, an amiable disposition, a rich fund of anecdote, a heart full of sympathy for those who were in pain and distress, a consciousness that his efforts would relieve the suffering necessary upon an operation won for him universal respect. Those who have had the pleasure of operating with him, well remember what pains he took

to allay fear, whether it were the little child or the adult, he would find some subject that would sure to interest the patient, and as consciousness was ebbing away the remarks would cease, to be resumed upon the approach of recovery. The Dental profession has lost a kind friend, the public an able scholar, and suffering humanity a great benefactor. He has bequeathed to us his researches and his inventions, and so long as anæsthetics are required the name of Joseph Thomas Clover will live.

Correspondence.

[We do not hold ourselves responsible for the opinions expressed by our Correspondents.]

CAUTION TO DENTISTS.

To the Editor of the 'British Journal of Dental Science.'

SIR,—I believe Dentists are generally fortunate enough to escape the proceedings of the "Long Firm." One of these gentlemen, taking advantage of the ravages of time, has just made me a victim, and so I beg to caution brother professionals against a man, calling himself Chappell, "Engineer" and manufacturer of some boiler composition; he is of broad build, with short grey beard, and I need scarcely add, was "not particular about the price." As I have not seen him since I fitted the teeth, they are doubtless at some pawnbroker's, if not melted. I am informed by the police he is well known, and moves about the country.

I shall be very glad to send models of this man's mouth to any Dentist who would like to be forearmed.

I am, &c.

H. B. MOSELY, L.D.S.I.

Leeds.

To Correspondents.

1. Communications intended for insertion in the ensuing number must be forwarded to the Editor, at the Offices, 82, Mortimer Street, Regent Street, London, W., by the 8th and 23rd of the month, and must be duly authenticated by the name and address of the writer.

We cannot undertake to return communications unless the necessary postage stamps are forwarded.

It is earnestly requested of our correspondents that their communications be written on one side of the sheet only; and we also beg to call particular attention to the importance of a carefully-penned signature and address.

All communications relative to subscriptions and advertisements are to be addressed to the Publisher, Mr. J. P. Segg, 82, Mortimer Street, Regent Street, London, W.

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ANSWERS TO CORRESPONDENTS.

"CAPE TOWN."—1. There is no law to prevent a Dentist advertising his inventions, mode of practice, scale of fees, or address. 2. Every one before receiving his diploma is required to sign a declaration that he will not attract business by advertising or any other unbecoming practice, and that I agree that such diploma shall be cancelled on it being proven that I have done so. 3. All Dentists must be registered in Her Majesty's possessions before they can recover fees for Dental operations, and are liable under the Act to the penalty if they have not done so.

Communications have been received from B. T. Hutchinson (Cape Town), George Ward (London), Dental Manufacturing Company (London), J. H. Parkinson (Manchester, late St. Helen's), F. Henri Weiss (London), Messrs. Ritchie & Co. (London), Alex. de Negri (Hampstead), Henry B. Mason (Exeter), W. F. Cornelius (London), Fred Bate (London), Messrs. Ash & Sons, Thomas Fletcher, H. B. Mosely.

BOOKS AND PAPERS RECEIVED.

'L'Odontologia.' 'El Progreso Dental.' 'Touring in Wales,' E. Richardson. 'Missouri Dental Journal.' 'Glasgow Medical Journal.' 'Medical Times and Gazette.' 'British Medical Journal.' 'Lancet.' 'Pharmaceutical Journal.' 'Dental Record.' 'Troisième Circulaire Annuelle de l'École et de l'Hospital Dentaires libres de Paris.' 'Cosmos.' 'Revue Odontologique.' 'Progres Dentaire.' 'New England Journal of Dentistry.' 'Calendar of the London Dental Hospital.' 'Die extraction der zahne,' Prof. Dr. L. H. Hollaender.

NOTICE.—We desire that it may be clearly understood that our pages are open to all for free expression of their views on matters connected with our profession. We only ask for terseness of expression and MODERATION IN TONE.

When otherwise unobjectionable, difference of political or other opinion will never be regarded by the Editor as a disqualification for the admission of any communication to the pages of the BRITISH JOURNAL OF DENTAL SCIENCE.

British Journal of Dental Science.

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STOMATITIS.*

By C. S. BUCKLAND.

MR. PRESIDENT AND GENTLEMEN.—The subject I want to bring before your notice to-night is one with which every Dental student ought to be thoroughly acquainted, for although in its milder form it is comparatively harmless and yields readily to treatment, yet in its severe stage its progress is so rapid and so fatal that it is only by a correct diagnosis and instant action that the patient's life is to be saved. You will hear nothing original to-night, nothing fresh, but if my remarks should cause some of our new members to thoroughly read up this subject, of which time will only allow me to give the more important points, my end will have been achieved.

Stomatitis is divided by Dr. West, in his 'Lecture on the Diseases of Infancy and Childhood,' into three classes, but I propose to consider it under five heads, namely, Simple Stomatitis, Thrush, Aphthous or Follicular, Ulcerative, and Gangrenous Stomatitis.

Simple stomatitis will not detain us long. The mouth and tongue are more or less covered with red, shining patches, slightly raised, which occasionally join one another and give a general appearance of inflammation; in severe cases the epithelium dies, causing white patches to appear here and there. It is most commonly present while the temporary teeth are appearing, and then there is also slight fever. In

* Read before the Students' Society of the Dental Hospital of London.

adults, dyspepsia and a too free indulgence in alcohol are frequent causes of this trouble. The only treatment required will be the use of some emollient mouth-wash, and a dose of aperient medicine.

That condition of the mucous membrane known as thrush is nearly always the result of feeding children artificially, and therefore of insufficient nutrition. The mouth is covered with a number of small white spots, the removal of which leaves the subjacent membrane red and bleeding occasionally. These spots, which at first are about the size of a pin's head, make their appearance on the inner surface of the lips, especially near the angles of the mouth, or on the inside of the cheeks; the tongue is also covered with them, more thickly at the tip and sides than towards the middle, and a few are found on the gums. After a little time, some of the spots become considerably larger and less circular, and gradually the white crusts fall off, leaving the mucous membrane abnormally red; this process may be repeated several times before the membrane resumes its healthy aspect. In very severe cases the specks may coalesce or even assume the appearance of a false membrane, which is of a yellowish colour. Children suffering from this form of stomatitis are usually thin and out of health, the bowels being relaxed, and as taking food is a troublesome affair, debility with drowsiness are present.

The true nature of this disease was first pointed out by Professor Berg, of Stockholm, in 1842. He found in the deposit of thrush a cryptogamic growth, the *Oidium albicans*. This discovery led to two opinions being formed: one of these was that the growth constitutes the essential part of the disease; the other was that the white substance is an inflammatory exudation in which the presence of confervæ is accidental. What takes place is this. Owing to some trouble in the digestive organs, the mucous membrane of the mouth becomes slightly inflamed, the secretion becomes acid, and epithelium is freely produced. This is just the condition of things to suit the *Oidium albicans*, the sporules of which rapidly increase, until the tongue, hard and soft palates, cheeks and lips, and occasionally the pharynx and œsophagus,

are covered with a white layer composed of the fungus and epithelial scales. Professor Berg found by experiment that thrush could be produced by the transplantation of the sporules from one child to another, and thus gave an explanation of its prevalence in children's institutions. Thrush, then, is due in the first instance to certain ailments of the digestive organs, then the mucous membrane of the mouth becomes inflamed, its secretion acid, and epithelium is abundantly formed; the cryptogamic growth appears last and is not the *cause* of the child's indisposition. The first point to give attention to in the treatment will be to correct the constitutional disturbance from whatever causes it may arise. In the local treatment, cleanliness must play an important part. After every meal the mouth should be carefully wiped out with a piece of soft rag dipped in warm water to remove all particles of food. In the milder form of the ailment nothing further will be required, but in severe cases it will be necessary to wash out the mouth with a lotion composed of half a drachm of borax to an ounce of water. Having cleansed the mouth with warm water, apply the lotion on a piece of lint. Another useful lotion consists of gr. v Ag. Nit. in an ounce of water, to be used once or twice a day in conjunction with the borax. Mr. Tomes recommends sulphurous acid. At one time honey formed one of the ingredients of the favourite applications, but owing to its great tendency to ferment, it is likely to encourage the growth of *confervæ*.

Aphthous or follicular stomatitis occurs under two conditions: either as a concomitant of measles (in which case it is an extension to the mouth of a state of inflammation similar to that which causes the eruption of the skin), or it is associated with gastric disturbance. In the latter case, for several days before the local mischief is noticed, fever, restlessness, and loss of appetite may be remarked. Then the child can only take food with great pain, the submaxillary glands become swollen and tender, and the flow of saliva increased. On examining the mouth, we find the mucous membrane of a deep red colour, and the centre of the tongue covered with a coating of thin mucus. On the tip of this

organ are several small, round, shallow ulcers, on the surface of which is a yellowish white slough. These ulcers are also found on the lower lip, especially in the sulcus and on the inner side of the cheek; they are not very numerous, but as one batch disappears another comes up, forming occasionally an ulcerating line. They remain the same size, and never take on a gangrenous form.

As in the case of thrush, our attention must be given to the internal disorder, and then even without local remedies the affection subsides. Cure will be hastened by the use of the borax lotion, and the Ag. Nit. may be employed if the ulcerations are at all obstinate. The teeth should be kept clean, and their necks may be painted with glycerine and carbolic. Mr. Tomes recommends that a piece of lint soaked in *Acidi Carbolici Glacialis*, *Liquor Potassæ*, āā ʒj, *Aq. ad* ʒiij, may be placed in the sulcus. Should there be any deeply excavated isolated ulcers, they may be treated with sulphate of copper, nitrate of silver, *strong* carbolic and glycerine or nitric acid, any of which will effect a speedy cure.

In the case of *ulcerative stomatitis* we have a much more troublesome variety to deal with, for while the follicular form does not lead to any loss of substance, in that which we are about to consider the gum is often extensively destroyed and the teeth loosened; and in aggravated cases the alveoli become exposed and exfoliate, the temporary teeth and occasionally the crypts of the permanent being lost. Its victims are generally ill-nourished children between the ages of two and five years living, in unhealthy districts, and it is common after scarlatina, measles, and smallpox; absence of green vegetable diet is supposed to encourage its appearance. Although both jaws are affected, the disease is more common in the lower than in the upper, the necks of the incisors being first attacked. In this situation the mucous membrane becomes congested, swollen, and shiny, a condition shared with the gums generally. After a while, that part which is in contact with the necks of the teeth is covered with a yellowish-white deposit. In severe cases this ulcerated condition works round to the back of the mouth, laying bare the roots of the teeth; the cheek swells, as does

the tongue, which becomes indented by the teeth, the saliva becomes abundant and exceedingly fetid, and owing to the gums bleeding on the slightest provocation tinged with blood. When the cheek is in contact with the ulcerated surface of the gum, the former also is affected. It is chiefly when ulcerative stomatitis follows scarlatina or measles that it is accompanied by necrosis of the alveoli. Another serious consequence is the formation of adhesions between the cheek and gum; this may be prevented by keeping a slip of lint steeped in some disinfectant solution between the parts. Should they exist to a serious extent, they should be separated in the manner so ably described by Mr. Tester in his recent paper. It is a question whether ulcerative stomatitis would cure itself, but since we possess an almost certain cure for it, we need not trouble ourselves about probabilities. The bowels must be first attended to, and then that useful remedy, chlorate of potash, will have an easy victory over the enemy; the dose is gr. iij every four hours for a child of three years, and about gr. v for a child about eight or nine. The diet should be light and nutritious, quinine or some other tonic being administered to help to bring the patient to a good state of health, and then in about ten days or a fortnight all trouble disappears. Cond's fluid or a wash composed of gr. v of chlorate of soda will suppress the offensive odour.

In a communication addressed to the 'Medical Times,' in 1856, Mr. Hutchinson was of opinion that cancrum oris, which we shall presently consider, is an intense form of ulcerative stomatitis, in which the symptoms run their course rapidly. Mr. Erichsen thinks the same. Mr. Hutchinson also mentioned a case of ulcerative stomatitis which lasted for five weeks, being treated with gr. vij doses of the chlorate, but which rapidly improved on the amount being increased to gr. xx; there was then a relapse on account of the medicine being discontinued. Other examples were brought forward to show that cure is rapid and certain, but that the trouble is likely to return if the potash be left off too early. Later on he came to the conclusion that M. Bretonneau was right when he said that ulcerative stomatitis is a form of diphtheria,

and that the supposed ulcers are superficial abrasions coated with false membrane. He also cured some cases by employing a lotion of chlorate of potash as a mouth-wash without administering anything internally, and as the result of his observations was of opinion that—(a) the effusion of a coherent thick layer of false membrane over a superficially abraded surface being the chief feature of the disease, it should be called “buccal diphtheria;” (b) that the fœtor is due to the decomposition of the exposed layers of the false membrane; (c) that it is curable by the local application of chlorate of potash alone. It would be interesting to know whether the chlorate of potash can be detected in the saliva after being taken internally.

In the ‘Lancet’ for March, 1858, Mr. Hutchinson called attention to the fact that chlorate of potash administered to a healthy subject has the power of producing a form of stomatitis exactly resembling that over which it possesses such specific curative powers. He observed this in four cases. In the first, a young man suffering from an acutely inflamed carbuncle took the chlorate in fifteen-grain doses for two days, when ulcerative stomatitis came on. This was deemed an accident, but other cases occurred which left little doubt as to their real nature. Another writer, Mr. John Trail, afterwards confirmed this fact. Among the various explanations given of defective enamel of the permanent teeth, the occurrence of stomatitis in early life has a place. I should like to know whether there is sufficient ground for this disease sharing the honour with one or two other supposed causes.

The last variety of stomatitis we have to consider, namely, gangrenous cancrum oris or noma, is very rare, and it is a fortunate circumstance that it is, for it generally proves fatal. Dr. West mentions that out of 6 cases that came under his notice only one survived; MM. Rilliet and Barthez give a mortality of 20 out of 21, while M. Tourdes, in a paper on this subject, stated that out of 239 cases he had heard of, 176 or about 75 per cent. succumbed. This being the case, it behoves us, as Dental surgeons, to study this disease carefully (notwithstanding its rarity) in order to recognise any case that

may come under our notice, the only chance of saving the patient's life being early and decided treatment.

There cannot be much doubt as to whether gangrenous stomatitis is due to alterations in the condition of the blood, when we remember that it is nearly always, if not invariably, the sequence of measles, typhoid fever, or ague. In this respect it differs from the other forms, which are not often attended by any great constitutional disturbance. The mouth is not the only position in which we find this form of gangrene, for occasionally the genital organs in young females are attacked in a like manner, when the malady receives the name of *Noma vulvæ*.

In consequence of patients suffering from gangrenous stomatitis being already in a state of ill-health, the first stages of the disease are not, as a rule, noticed, and considerable mischief is done before any steps are taken to check it. There is some doubt as to whether the trouble commences in the substance of the cheek, or whether it first makes its appearance in the mucous membrane. The general opinion seems in favour of the latter, while some good authorities say swelling of the cheek with a hard nucleus is the first indication, the ulceration of the mucous membrane following. However it does not much matter which way it is. It occurs generally between the second and fifth years, most commonly between the third and fourth, although these are not the utmost limits. The first symptom to attract attention is swelling of the cheek, and this swelling differs considerably from that which sometimes accompanies ulcerative stomatitis. Instead of being simply puffy, without the colour being altered, the cheek is hard, red, and shining, looking as though it had been carefully polished; it is unyielding so that the mouth cannot be opened to any great extent. The disease seldom occurs on both sides; both upper and lower lips, however, are liable to be reached, although never the starting point. In the centre of the swelling there is a spot of a brighter red than the rest, and at a point corresponding with it in the inside, is a deep ulcer with jagged edges, its surface being covered with a dirty brown slough. The gums opposite to it are dark, smeared with putrid matter and

partly destroyed, the teeth loose and the alveoli laid bare. Sometimes, instead of a single ulcer, the whole inside of the cheek is in a putrid condition, the mucous membrane hanging down in slips; the gangrene reaching the gums, the teeth drop out, and the alveolar process becomes necrosed; saliva is abundantly poured out, and assumes a greenish-brown colour in consequence of passing over the putrefying mass, while the odour emitted is most disagreeable. This condition of the interior of the mouth is of itself terrible, but that is not all, for the outside of the cheek is at the same time undergoing change. The general redness and swelling increase, the dark spot in the middle gradually grows larger, and in the centre of this a black spot makes its appearance, being very minute at first but increasing with great rapidity, sometimes reaching an inch and a half in diameter; outside this a bright red ring appears, and then the slough separates. In spite of this dreadful condition, the child happily suffers little pain, the appetite remains tolerably good, but the pulse becomes more feeble, and death, as a rule, quietly claims its victim, although convulsions occasionally come on.

On the gangrenous parts being examined, it will be found that the absorbent glands are enlarged, and the cellular tissue infiltrated with serum, the vessels in the immediate neighbourhood being filled up by a clot, in consequence of which serious hæmorrhage seldom comes on.

The treatment must be both rapid and energetic, half measures being of no use whatever. The patient being put under some anæsthetic, the sloughing must be arrested either by excision and actual cautery, or by the action of some caustic. The latter method is the most common. The tongue being protected by a spatula, hydrochloric or nitric acid should be applied to the unhealthy parts by means of amadou securely fastened to a piece of cane. The acid must not be spared, for it is better to sacrifice a little healthy tissue than to err on the other side. This will probably cause the cheek to swell, leading one to think that all is not going on satisfactorily. The mouth must be frequently examined in order to find out whether mortification has

been stopped or is still progressing; in the latter case the strong acid must again be applied, but if the case is going on well it may be diluted. A disinfectant mouth wash may be used to keep down the foetor, and the patient's strength should be kept up by the employment of stimulants, good diet and tonics. Chlorate of potash may do good in ten to twenty-grain doses, at any rate, it cannot do much harm. Should any case present itself to us, we must do our utmost to stop the gangrene at once, but with our knowledge of past cases we can scarcely hope for success. I must apologise, gentlemen, for bringing this subject before in such an uninteresting manner, and while thanking you for your attention, express a hope that you will give me the benefit of your individual experiences.

CASES OF DEAD TEETH TREATED BY AN ANTISEPTIC PROCESS.

By ALFRED COLEMAN, L.R.C.P., F.R.C.S., L.D.S., &c.

IN a recent article in the 'Dental Cosmos' on my "Dental Surgery and Pathology, the reviewer," speaking of the treatment of dead teeth by arsenious acid, remarks "This we venture to predict will never become a favourite plan of treatment."

With regard to the review itself I have here, of course, no concern, my present object being only to bring before my professional brethren the results of a method of treatment, which, so far as I know, originated with myself, and which will, I believe, be found to surpass any at present in use for the cases in which I advocate its employment.

Such cases may be briefly described as teeth in which the whole, or nearly the whole, of the dental pulp has lost its vitality, and where the adjacent dentine, either through decomposition of the contents of the dentinal tubuli, or satura-

* Read at the Annual General Meeting of the British Dental Association at Liverpool, August 25th, 1882.

tion with septic fluids from the decomposed pulp, has become putrid and offensive, and, according to the degree of its putrescence, coupled with the state of health of the individual, more or less affects the cementum and its contiguous vascular membrane.

Cases are not unfrequently met with in practice where, after the removal of the softened dentine in a carious tooth, we come upon a dark spot, situated in the direction of the pulp cavity, and at which spot a fine probe will pass into the pulp cavity, and yields on its removal a most offensive odour, too well known to the Dental practitioner. Equally frequent, perhaps, are the cases where the same condition prevails upon the removal of a filling—an amalgam especially—which has been for a long time defective, and where decay has progressed behind it.

In many of the above cases we find there has been but little pain, although in a large proportion we find there has been some tenderness when the functions of such teeth have been unduly exercised. To fill such teeth immediately is, we know, to determine a series of symptoms most disastrous to the well-being of the patient, whilst to bring the tooth into the condition in which filling can be safely carried out is usually a very tedious process. It is true that a large proportion of these cases may be treated, and with moderate success, in a very simple manner, viz. by leaving in the filling, or making through the tooth itself a small vent for the exit of discharge. Teeth thus treated are, however, somewhat liable to attacks of periodontitis, and my experience of the method would lead me to say that about five years will be the average duration of a stopping so conducted. Much, however, will depend upon the manner in which the operation is carried out, one point essential to success being the fineness of the duct. A large opening invariably gets choked up, as well as admits particles of food. It is, I believe, impossible to institute too fine a one, but so that it is actually patent.

The process I then recommend for the generality of such cases I have thus carried out. After removing all the softened dentine and the contents of the pulp cavity, but

not those of the fangs, and well syringing and drying, carbolic acid on cotton is placed in the pulp cavity, and left there for a few minutes, the time generally occupied whilst preparing the filling. This latter being made ready, the carbolic acid is then removed, and the cavity again dried, and over the fang cavity or cavities, as the case may be, is placed a small disc of stout writing paper moistened with carbolic acid, on one side of which has been taken up the twentieth to the fifteenth of a grain of arsenic, this side being applied to the fang cavity. Over this zinc-oxychloride, as usually mixed for a filling, is placed, about as much as nearly or quite fills up the pulp-cavity—and when this has set the remainder of the cavity may be filled with any suitable filling. In the case of molars, and where it may be supposed there is any possibility of a second application of arsenic being necessary, I fill temporarily with gutta percha.

I now proceed to give the cases I thus treated in the year 1880. My reasons for selecting this year especially are: firstly, that during it I saw comparatively a very small number of private patients, which all these cases were. Secondly, that a large proportion of these patients were friends and neighbours, whose cases could be followed up without difficulty; and, thirdly, that during that time and since I have been able to keep more accurate notes of all my cases.

	Tooth.	Surface.	Result.
1880.			
March 31st ... Mrs. J.	adult ... up. right canine ...	posterior ...	satisfactory.
April 13th ... Miss B.	ditto ... ditto ...	ditto ...	ditto.
April 21st ... Mrs. J.	ditto ... up. left canine ...	ditto ...	This tooth had been filled three times previously, after lengthened dressing, but fillings had to be removed. Slight discharge from pulp cavity, and slight tenderness on percussion; wished to have it removed, certainly not stopped, from pain previously experienced. As seen a short time ago, it was perfectly free from pain since period of filling, not at all tender on percussion, and very serviceable.
June 7th Mr. B.	adult ... up. left 1 molar ...	anterior ...	Tooth previously filled with gold, cavity at side, considerable discharge; treated as described, with temporary gutta-percha filling.
June 14th ... Mr. B. (the above)	ditto ...	ditto ...	Filling removed to see condition; pulp cavity sweet; process repeated with permanent filling.

1036 DEAD TEETH TREATED BY ANTISEPTIC METHOD.

	Tooth.	Surface.	Result.
July 19th	...Mrs. A.....adult...low. 1 left bicusp...	posterior...	satisfactory.
July 20th.....	Mr. De L... ditto...up. left 1 bicusp...	ditto	...satisfactory.
August 7th	...Mr. T. ditto...up. right 2 molar...	mast.	...This tooth had been thus treated two years previously and completed with zinc-oxy-chloride, which was giving way. On removal, pulp cavity perfectly sweet; filled permanently.
Nov. 1st	Mr. D.....adult...up. right canine ...	ditto	... This patient returned, on August 9th, 1881, complaining of pain in region of this tooth. Filling removed, pulp cavity sweet, tooth free from tenderness on percussion, refilled, pain disappeared on tonic treatment. Patient's conclusion was that tooth was not the cause of pain.
Dec. 4th	Miss McF...adult... up. left lateral ...	mesial	...satisfactory.
Dec. 14th.....	Master B...youth...up. 1 left molar...	mast.	... ditto.
Dec. 18th.....	Master F... ditto... up. left canine ...	posterior...	ditto.

In addition to the above I relate two cases occurring later on, on account of the interest they present.

1881.

March 1st ...Mr. T. adult..low. 1 right bicusp.. ditto ... Tooth loose, very tender to pressure, surrounding gum swollen and inflamed. Treated by this method it became perfectly serviceable and free from tenderness in less than two weeks.

1882.

April 12th ...Miss V. ...adult...up. 1 left molar... anterior... Tooth filled with gold, large filling, and excellently carried out; considerable swelling in the palate; gumboils of large size over roots of external fangs, portion of stopping drilled out; considerable discharge from fang cavities; treated with arsenic twice; no change for better or worse. Dressed weekly for eleven weeks with dressing chiefly composed of eucalyptus oil; at last visit filled with fine hole for outlet of discharge; abscesses had almost entirely disappeared. This case is given as one in which treatment by arsenic was of no service. Such cases are no doubt much better treated by such applications as eucalyptus oil, or creosote and iodine often repeated, perhaps also iodoform, but of this latter I have had no experience.

Of all known substances which arrest the decomposition of animal matters arsenious acid probably stands at the head. The preservers of skins of birds and animals have as yet found nothing to surpass it, and it is still, I believe, the most important ingredient in the injection fluids for subjects for dissection; its compounds with albuminous substances being of so stable a character. I am aware that a prejudice exists against its employment on the ground of its being such a highly poisonous substance, but if only ordinary precautions

be exercised when employing it, I do not believe that any harm will ever ensue. It is now certainly more than ten years since I accidentally hit upon its use for the cases I have described, and although I have thus largely used it, and often in the case of young children, I have never met with a single instance in which I could trace to its employment the slightest injurious result. In the latter cases I have employed it for the prevention or cure of intractable gum boil, in many cases with complete success, in almost all with considerable mitigation of the symptoms.

THE ETIOLOGY AND PATHOLOGY OF DENTAL
DISEASES: WHAT WE KNOW, AND WHAT
WE WOULD LIKE TO KNOW.

By HENRY SEWILL, M.R.C.S., L.D.S. ENG.*

(Continued from page 985.)

To sum up then, thus far, the factors in the direct causation of caries, they are, a weak point in the enamel, or retention of acid-generating agents in contact with its surface; secondly, acids and organic products of decomposition in sufficient quantity to dissolve and disintegrate the tissues. The precise share taken by the several agents in the process of caries is one of the things we would like to know, although this item is not of supreme importance. That the acids alone do not produce all the phenomena is obvious from the fact that dentine, after perforation of the enamel, is the favourite seat of caries; whereas acid acting alone would most rapidly attack the enamel. It is equally inconceivable that micro-organisms could gain access to the dentine without the assistance of an acid capable of perfora-

* Read at the Annual General Meeting of the British Dental Association at Liverpool, August 26th, 1882.

ting enamel. Three facts we may here note: first, that micro-organisms, numerous in proportion to the extent of the disease, are always present in the canals of carious dentine; secondly, that acid generated in contiguity to the teeth, and acid conditions of the buccal secretions, hasten the commencement of caries; and, thirdly, that simple experimental decalcification of extracted teeth by acid does not at all resemble caries, but destroys the enamel first and afterwards renders the dentine soft and elastic by removal of its earthy constituents.

We would like to know—for at present we are uninformed—what, if any, is the influence of *leptothrix*? This fungus grows on the exterior of the teeth, or of the carious spot, but never penetrates below the surface. According to the admirable observations of Messrs. A. Underwood and Milles, the exact stages of the progress of caries are as follows. The enamel is first perforated by acid, the organisms then find their pabulum in the fibrils of the dentine and destroy them, encoaching upon the matrix; while the lime salts are dissolved out by the acid reagents derived from the organisms themselves. In this manner the more organic tissue, the dentine, is eaten away. The enamel, partly dissolved and undermined, either remains as a shell or breaks away for lack of support. The initial stage of caries undoubtedly depends greatly, if not entirely, on the action of acid; and this stage, let us note particularly, may be induced artificially by introducing a pellet of cotton wool between two teeth and allowing acid to collect in it and to act upon the adjacent enamel.

Here I must crave pardon if I turn aside for an instant to express the great obligation I am personally under to Mr. Arthur Underwood. He has given me the fullest information upon the whole of the work in which he has been engaged on this and on other subjects. No one can have the privilege of Mr. Underwood's friendship without discovering in him the true spirit of the man of science—keen in pursuit of truth, eager to submit his observations to intelligent and searching criticism, and anxious to impart knowledge to others.

With regard to the morbid anatomy of caries I will make only two more observations. The first is that the discoloration of carious dentine has never been explained. The diseased tissue is often stained to varying tints of brown, black or green. This pigmentation, I would suggest, is probably due to the presence of bacteria. It has been proved that these organisms produce pigments, and their presence in carious dentine is also demonstrated. The second observation is in regard to certain changes which apparently take place prior to actual disintegration in that portion of dentine through which the disease is advancing and which is situated immediately contiguous to the already disorganised tissue. This altered dentine in dry sections and under a low power, has a translucent appearance and forms either a regular zone, or exists in isolated patches around the walls of the cavity. The appearance was once thought to indicate invariably a vital or pathological action, so to say an effort of nature to arrest the disease; the tissue hardening by calcification of the dentinal fibrils similar to that which occurs as a natural phenomenon as age advances. Such a changes does, perhaps, really occur in some cases, especially in slowly advancing caries in teeth of good formation, and it renders the tissue harder and able to retard the progress of decay, and even sometimes to resist it altogether. It is found, however, that a precisely similar translucent appearance is always produced during the gradual softening of dentine by acid; and to this softening, and not to consolidation, the appearance in caries is due in the majority of instances.

The local and constitutional diseases, to which I have several times alluded, which favour the onset and progress of caries are those, and can be those only, which are accompanied by or tend to aggravate morbid conditions of the oral mucous membrane, and those which give rise to the formation and deposit of acid in the mouth. Among the former may be enumerated all the varieties of stomatitis, among the latter phthisis, scrofula, hereditary syphilis, diabetes, chlorosis, gout, chronic alcoholism, and dyspepsia. These constitutional affections exert their baneful power upon the teeth solely, I repeat, in consequence of the chronic inflam-

mation of the gums, and the vitiation, even general acidity, of the secretions of the mouth, with which they are all so commonly accompanied. For the same reasons caries is frequently active during pregnancy. During febrile diseases, in which the secretion of saliva is scanty, and the teeth remain coated with sordes, epithelial scales, viscid mucus, and other foul secretions, caries, as might be expected, is often originated; and when previously present is always accelerated. It is very common to see the suggestion made that these effects are due to morbid influences acting upon the teeth through the general system. There is not a shadow of evidence for this statement, and all the facts can be otherwise accounted for.

If it were true we should certainly perceive simultaneous pathological changes in the pulp and other vascular connections of the teeth, such as always occur in diseases of non-vascular tissues most closely analogous in formation to enamel and dentine, but which have never been noticed in dental caries. Secondly, all diseases which promote caries are such as are accompanied by vitiation of the buccal secretions favouring the formation of acid, the direct excitant of caries. Thirdly, although there has recently been an attempt by some German physiologists to throw doubt on the fact, we can hardly hesitate to acknowledge that the anatomical characters of enamel and dentine are such as preclude the possibility of their initiating or carrying on vital pathological action. Would any tissues capable of vital action passively submit to an operation like filling teeth, such as is daily practised with certainty?

The statements which I have striven to make clear with regard to the pathology of caries appear to furnish a very satisfactory theory of the disease. The theory is entirely based on demonstrated facts, and these are enough to account for all the phenomena. It is difficult—at least, for me—to believe that this account of the pathology of the disease should not be soon universally accepted. In the presence of incontrovertible facts, which at most need only some slight further elucidation, we should at any rate certainly do wrong to entertain seriously some of the theories which have

been from time to time put forth, and which are based upon pure hypothesis or groundless speculation.

That the various classes of teeth are not equally liable to be attacked by caries is a fact hitherto unexplained. The first point which attracts attention in the statistics gathered is the great relative frequency of caries in the six-year molars; the next the much greater frequency of the disease in the front teeth of the upper than in those of the lower jaw. The latter fact may, perhaps, be accounted for by the circumstance that the lower front teeth are protected to some extent from the action of acid by the saliva with which, owing to their position, they are constantly bathed. The localisation of caries is, however, most probably determined mainly by the presence of inherent flaws in the affected teeth, but we would like to know whether this is a fact, and if so why certain classes of teeth should be more than others the seat of these defects.

With rare exceptions, caries, unless checked by art, having once attacked a tooth, progresses with greater or less rapidity until the tooth is destroyed. In its progress there comes a time when the pulp chamber is laid open and the pulp exposed to the atmosphere and other sources of irritation. It is not my intention to enter into a lengthy examination of the pathology of the pulp. The pulp has not, like enamel and dentine, a unique pathology—one totally differing in its phenomena from every other disease; and the point which I wish mainly to emphasise is that the pathological changes which take place in an exposed pulp are due to inflammation, and are in their nature essentially the same as similar inflammatory processes in other tissues of the body. It matters not whether an iris, a synovial membrane, a lung lobule, or a dental pulp be the seat of the morbid action, these processes are the same, modified only by the anatomical peculiarities of the part. In the case of the pulp, it must be borne in mind that it contains certain specialised cells, and, next, that it is confined within the rigid walls of a chamber which prevents swelling and checks the ready escape of inflammatory effusions and exudations. What we, under this heading, would like to know is whether a pulp, exposed

to the atmosphere and no other irritation, will in every case pass into a condition of disease. We know that a joint or other analagous cavity, wounded, or opened in a similar way, will speedily become inflamed, if not kept aseptic by art. The condition of an exposed pulp might be, perhaps, broadly compared to that of the tissues exposed in such a wound or in a compound fracture. Then we would like to know whether a wounded pulp will, under antiseptic treatment, heal and cicatrise. We often hear of cicatrisation of a pulp, but I am not aware that a cicatrix has ever been demonstrated.

(To be continued.)

A PLEA AGAINST PULP EXTERMINATION.

By FREDERIC ROSE, L.D.S. Eng.

I AM tempted to go over this much-worn ground because having, during the last year of my time at hospital, and since then in private practice, directed my very special attention to the subject of pulp capping, I am vain enough to believe that a brief record of my experiments, and the successes attending thereon, may assist those of my professional brethren who have not been fortunate enough to find that process a very successful operation in saving the large majority of pulps that are presented for treatment.

I had taken a large number of interesting notes of cases treated on the system I am about to advocate during my time at the National Dental Hospital, but unfortunately the book containing them has got mislaid, and a record of all my cases copied from the books of the hospital is too meagre to afford more than a mere reminder of some of the cases; I therefore must request my readers to be content with a statement of my *modus operandi*, and verify what I say by personal experiment.

I got the first idea of this method of treating pulps from

my friend, Mr. W. R. Humby, of London, whom I here thank for a suggestion which has completely revolutionised my practice on this one head.

Now, when a patient comes to the Dentist in violent throes of toothache, what is the general line of conduct followed by, I venture to say, at least eighty out of a hundred practitioners? If the tooth be only a hollow shell, very likely the patient gets relieved of his pain by the detestable operation of extraction, and goes away perfectly satisfied both with his own bravery and the Dentist's skill. If the tooth be not very badly decayed an examination is made with the mirror and the probe, and if a pulp exposure be discovered a napkin is stuffed into the mouth, the cavity wiped out more or less carefully, according to the Dentist's notion of how much dryness is necessary, and a dressing of arsenic, either with or without other medicament, is placed on the exposed pulp, and sealed up with cotton and mastic. For some hours the patient suffers a nasty dull gnawing pain; he comes back the following day; the napkin is again stuffed into the mouth (yes, even by good dammists, who think the "dam" unnecessary for such a short matter as a dressing); the tooth is cleared of carious dentine; the disintegrated pulp is removed with a most lively touching-up of the remnant in the fangs; a dressing of creasote and tannin or other antiseptic carefully passed down the fangs, and sealed up with mastic. The patient goes away happy that there is no more pain, and the operator shakes hands with himself at the very skilful way in which he has passed the dressing to the *very apex* of the fangs. There are one or two more visits (fees, of course, each time), and finally the tooth is filled—a dead member ready to act as a foreign body at any time the patient's health becomes deranged either by cold or stomachic disorder, and causes sufficient inflammation as to necessitate the removal of the tooth. It may have lasted for ten years, but very frequently it only lasts a year or two. On the other hand, if we can succeed in saving the pulp, or even a remnant, we maintain conditions suitable for resisting constitutional ill health.

What I have just said applies more particularly to back

teeth ; if the tooth be an incisor or a canine the nerve-barb is at once resorted to, a course which, if gas be not administered, gives the most excruciating agony. One of the first duties of the Dentists, I take it, is the saving of pain, if it can be done consistently with preservation of the organ ; and as a matter of fact, the man who gives the least pain by his treatments will be sure to be the one most resorted to, as the public generally are more bent on saving pain than on the conservation of the tooth. Again, many Dentists, amongst whom are some of our leaders, have quite a strong conviction that once a pulp be exposed, be it pale and healthy, or red and inflamed, no matter, the most satisfactory treatment is to destroy it, not having faith that dentine of repair will eventually form as a protection to it. Now, I maintain that, without exception, if a pulp be healthy, and be properly treated, it need never again cause uneasiness, and it may be covered at once with a permanent filling. In this statement I believe I shall have the acquiescence of the large majority of the leaders in our profession. But I will go further. I am convinced, basing my conviction on about two years and a half of attentive experiment, that the treatment I am about to advocate will, by careful operators, be found successful in saving a very large proportion of inflamed pulps ; and though useful for healthy exposures, it is in cases of inflammation that it has advantages over methods already tried.

The patient first presents himself in an agony, and points to a tooth which has a large cavity in it. From the nature of the pain, length of its endurance, and the appearance of the tooth and gum, I diagnose that there is a pulp still left, and that it is in a state of inflammation, before I even look at the tooth. I then carefully wash the cavity with warm water, and at once slip on the "dam" (which let me here remark, for the benefit of those who reject its use as too tedious for short operations, that it can, with practice, be slipped on in from two to four minutes in the average run of cases). The dam being adjusted, I gently dry out the cavity with bibulous paper, and then examine it thoroughly. Doing it in this careful way one is able to ascertain the exact condition of the pulp. We find an exposed and inflamed pulp, and

still aching violently. The first thing to do is to direct a current of warm air into the cavity. This, as a general rule, at once removes all pain from the organ, or at least reduces it to a bare sensation, the effect of which may always be perceived by the troubled look on the patient's face being replaced by one of ease. Coincidentally with the cessation of pain, if we watch closely, we shall see the swollen and inflamed exposed portion of the pulp recede from the surface, somewhat like a worm retreating down its hole.

Now, the natural query is, "What is the cause of this, and what significance has it to the treatment?"

My theory is as follows, and I think the results justify the theory:—When the dentine is attacked by caries it becomes infiltrated with moisture, and as it softens it swells. As it approaches the pulp, and extends to its surface, the swelling of the dentine causes pressure on it, which, being enclosed in a hard box, causes pain by the compression of the nerve filaments; the irritation brings about a hyperæmic condition, which increases the swelling, and consequently the pain. If the decay has extended far enough to denude the pulp completely of dentine at one spot, at that spot will it tend to protrude. When we dry this off with the draught of air we contract the carious dentine and remove some of the pressure from the pulp, at the same time drying the surface of the pulp. This would account for the recession of the exposed portion, which I have so often observed on the application of the air. By the removal of the pressure we get cessation of the pain.

I now have my cavity perfectly dry and ready for excavation. If the pulp be not in an excessively inflamed condition it requires no medicaments; and I may further state my belief that where we can possibly do without them we give the pulp a much better chance. I have frequently seen cases of pulps taking on an unhealthy action where the cause has been, I feel convinced, carbolic poisoning. I now excavate the cavity, taking care to give the pulp a wide berth, and leaving as strong a floor of the carious dentine as is consistent with a properly-shaped cavity. I now take a pledget of cotton wadding, steep it in copal-ether varnish,

and swab the cavity thoroughly; then cutting with my scissors a suitable sized disc of the thin cork such as Mr. Fletcher uses for his advertisements, I dip it into the varnish, and carefully adjust it over the exposure, and again apply warm air.

(To be continued.)

THE COMMON PAPAWE, ASIMINA TRILOBA, AS A DENTAL THERAPEUTIC.

By Mr. DUNN, L.D.S. Eng., Florence.

IN one of the numbers of the 'British Journal of Dental Science'—I think of December or November of last year—there was a short article describing how Prof. van Antwerp had by accident discovered some peculiar properties of the leaves and fruit of the common papaw, *Asimina triloba*. How he had applied it to an exposed nerve in a molar tooth, and how he had applied a filling of oxyphosphate of zinc over the exposed nerve which had been treated with the juice of the rind of the fruit, and apparently with a good result, at least let us hope so, for that part, as any subsequent history of the case was not related.

The article finished with the expression of a wish that some of your readers would try the effects of the *Asimina triloba*.

It happened that about the time an old friend, who has lived many years in Jamaica, was staying with me, I asked her if the papaw tree grew in that island, she told me it did, and that the natives used the fruit of it to make their meat and fowls tender.

A day or two after a critique or review of Karl Bock's book of 'Travels in the Remote Parts of Borneo,' fell into my hands, and in it he also spoke of the papaw or *Asimina triloba*, and how the Dyaks used it to make their meat tender.

All this inspired me with a great desire of making some experiments with this plant. I wrote to Prof. Caruel (Professor of Botany), begging him to tell me where I could find this plant ; he at once most kindly sent me a quantity of the leaves, part of these I put into spirit, of the others a decoction was made, and in both of these preparations were placed small pieces of raw meat. Very quickly a change was noticeable on the surfaces, but much more rapidly and deeply in the pieces placed in the water decoction. Then I applied it to teeth with exposed nerves, with the nerve in a state of suppuration, and with the nerve already suppurated.

In all these cases I believe I have observed a good¹ and marked change. In a few cases it seemed to irritate the nerve, causing increased pain, with a tendency to produce inflammation of the periosteum and the contiguous parts, but these were only three or four, whilst in the others (and I must have applied it in at least seventy or eighty cases) its effect was good and calming. Mixed with caustic it appears to act quite as well as phenic acid or creosote, without possessing the unpleasant odour of these.

In some cases it seemed to accelerate suppuration whilst forming, in other cases to diminish the effect.

In one case, in which the gum round one of the lower molars was swollen and a pustule was forming, I applied a piece of cotton wool dipped in the above-mentioned decoction ; the next day there was an abundant formation of very liquid pus, which emptied itself completely. I placed another piece of wadding with *Asimina triloba*, and the day after a circular hole, which passed externally into the interior of the sack or pocket, was seen, but there was no trace of pus, nor has it again shown itself.

In two other cases, where the gum had grown into a cavity of the tooth, one application alone of the decoction was sufficient to remove it in twenty-four hours, and that without causing any irritation.

I used it in some cases of Rigg's disease, but without success ; perhaps had it been possible to get a more powerful decoction the result might have been different.

Reflections from the Surgery.

NECROSIS OF THE ALVEOLUS AND LOSS OF THREE SOUND TEETH THROUGH A STUMP.

By GURNELL HAMMOND, L.D.S. Eng.

MR. X—, aged 39, came to me with an immense abscess in connection with the left side of the lower jaw. The face and neck were so swollen that I did not recognise him, and he was very weak and ill. He stated that he had been *kept in BED for THREE WEEKS, and treated for MUMPS*, using hot fomentations outside the face, &c.; but not getting any better he determined to come and see me, as he began to think it might proceed from some stumps of teeth.

I managed after considerable difficulty to see into the mouth, and found the left lower wisdom tooth actually rolling about and deluged in pus. This tooth I easily extracted, when a very considerable quantity of matter escaped. I ordered him to hold hot bread and water *inside the mouth*, to discontinue the hot fomentations, and to come again in two days' time.

Patient was much better on the next visit, but there was still great swelling and inability to open the mouth, although he was not suffering much pain. I now found that the second molar and second bicuspid had been lost some years, but there was evidently a stump of the first molar buried in the jaw, and this appeared to be the cause of all his trouble.

I made a deep incision down to the bone over the stump, extending from the socket of the wisdom tooth to the first bicuspid, and on probing I could distinctly feel the whole alveolus of that side *dead* and loose, and it came away at once. I directed him to use a wash of Condyl's fluid in warm water, and to let me see him next day.

On the next visit I found the case going on very well: less discharge and less swelling, and I syringed the wound with Tinct. Iod. ʒj to warm water ʒij. I should mention that both the first bicuspid and the canine were *very loose indeed*, so I was afraid they would be lost, but did not like to remove them. The patient now continued to improve, and saw me every other day for about a week, when finding (in spite of treatment) that the other two teeth were also implicated, I carefully removed them, and continued the syringing daily, the patient using Condyl's fluid at home.

After five weeks from the first day I attended him, I removed two more small sequestra, and from that day the case rapidly improved; the patient is now wearing artificial teeth.

I think the case is a good example of the great want of DENTAL knowledge shown by general practitioners of the present day, as all the suffering and *danger* the patient passed through would have been prevented had the case (a very simple one at first) been properly diagnosed.

FOREIGN BODY IN THE ŒSOPHAGUS PASSED PER ANUM.

By DAVID DAVIES, F.R.C.S., Eng., &c.

WM. F—, æt. twenty-six, married, a colliery clerk, came to my surgery on December 8th, at 5 p.m., in a violently agitated state, stating he had swallowed a plate with artificial teeth attached. He was suffering from acute dyspnœa and pain in the gullet, restlessly moving about, and feeling sure he was dying. On introducing a large pair of œsophageal forceps a foreign body could be felt about seven inches down the gullet. Failing to grasp the object with the forceps, though carefully and repeatedly tried, I gently pushed it into the stomach with a probang, to he immediate relief

of the patient. He was recommended quiet, a constipating diet, &c. He called daily, and on December 13th brought with him the artificial plate, which he has passed per anum that morning without any discomfort. He stated that whilst playing with his child on the day of the accident, tossing it in the air and catching it again, he suddenly felt the plate, one hook of which had been broken off, and from which two false teeth had fallen, slip down his gullet, causing intense pain and difficulty of breathing. He has since entirely recovered, and resumed work none the worse from his strange accident.—*Lancet*.

EFFECTS OF NARCOTISM ON THE TEETH.

IN the 'New England Journal of Dentistry,' Dr. Henry S. Chase, St. Louis, contributes the following :

"Many years ago I experimented with Sulph. Morphine in dental cavities. I found that the narcotic effect produced on the tooth was relatively as to the density of the dentine. In young teeth the narcotism was prompt. The same effect was produced in old teeth or dense teeth, provided the dental pulp was covered with decalcified tissue. But the indiscriminate use of morphine for the painless excavation of cavities I soon abandoned. I still use a simple paste of morphia and oil of cloves for the above purpose, closing the cavity with wax for half an hour, while operating on a less sensitive tooth. For teeth of hard tissue or for *immediate* work, I use a paste of chloride of zinc and bloodroot. Take a drachm of powdered bloodroot and grind into it all the chloride of zinc crystals that can be to make a paste without the addition of water. It will receive water enough from the atmosphere to make a paste. This paste is allowed to remain in the cavity seven minutes, without being wet. It causes some pain for half that time."

British Journal of Dental Science.

LONDON, NOVEMBER 1, 1882.

DURING the last few years attempts have been made to throw some light upon the various causes which lead to dental caries, and in our present issue we conclude Mr. Sewell's admirable paper on the "Etiology and Pathology of Dental Caries," supplemented by a number of queries which cannot fail to excite the attention of lovers of research. We must admit that much remains to be discovered, inasmuch as we are brought in contact daily with conditions which throw some doubt upon the accuracy of our well accepted theories. Allowing that new philosophical instruments enable us to demonstrate the existence of things which were previously not thought of, we must not lose sight of the fact that the present century in no way claims to be the last period in which the mysteries of nature shall be revealed. Abounding as it does in perhaps the greatest number of discoveries of all known ages, they are very many hypotheses, which in some instances almost amount to the ridiculous, that will one day be reduced to hard facts undisputable by all.

Throughout the scientific world nothing is attracting more attention than the "Germ Theory of Disease," originated by Pasteur and closely followed up by Tyndall, Koch, Sander-son, and others. The microscope has yet failed to disclose the nature of these primitive atoms.

Professor Tyndall, in his work, 'Floating Matter in the Air,' demonstrates the existence of these atoms by means of a beam of light, and about the use of these things we can only quote his own words: "What is the practical use of these curiosities if we exclude the interest attached to the observation of new facts and the enhancement of that interest through knowledge that facts often become the exponents

of laws ; these curiosities of themselves are worth little but they become the antecedents of practical consequences. How do they act, not upon the beam of light, but upon our own bodies ?”

Mr. Sewell has made this one of his queries, and there is no reason to doubt that they play a most important part in the process of dental caries, whether as a primary or secondary cause we must labour to prove. Bacteria are developed from these germs, and it is only when they have attained that form that the microscope reveals their existence. If, as Tyndall says, there is 50 per cent. of organic matter in the air we breathe teeming in countless atoms, and at each expiration quantities are left clinging to the respiratory tract, as is demonstrated by the final expiratory air having less in it, how can we expect the moist teeth to escape, as nearly all the air we breathe passes over them ? All we want is the condition favorable for their development. Again, experiments prove that most of the principal chemical agents have not the least injurious effect upon them, so that in dealing with their extermination a great difficulty is in our way.

Turning from this important subject, we find that in America a theory is propounded which should not be dismissed without careful consideration. It is, Can any irritation of the dental system in the mother be carried by the sympathetic nerve to the dental system of the embryo, thereby causing defective development of the same ? We give it as our interpretation of the theory, and when we come to remember the peculiar hereditary conditions of certain organs, we cannot but think that there is something worth reflecting upon. There is also another view brought forward which deals with the acidity of the oral secretions. Numerous cases arise where dental caries exists, and you cannot get at any time an acid reaction with litmus paper. The teeth from their eruption are not crowded, well-shaped, free from gingival irritation, and twice daily are cleaned with an alkaline powder or solution, and yet dental caries breaks out, not limiting itself to fissures and interstitial surfaces, but boldly attacks that part where, to support our old theories, we should consider it impossible.

We should not wish ourselves misunderstood on this subject, as we freely acknowledge the chemical theory, and do not altogether abandon the electric theory of Bridgman, but even fear, in spite of our present convictions, that the vital theory may at some time be forced upon us to admit by the recent investigations of Bödecker.

The knowledge we already possess on this subject will aid us materially in making our deductions, but, as we have said before, much has still to be found out before we master the ravages of dental caries, and can point out that such a condition will be productive of the disease, whereas another will give the individual perfect immunity.

THE Odontological Society of Great Britain will hold the first meeting after the vacation on Monday, November 6th, when a paper, entitled "A Consideration of Some of the Causes which give rise to Dental Decay," will be read by Dr. Alfred Carpenter. Messrs. Tomes, Coleman, and Henry Sewell have promised to bring forward some casual communications.

MR. T. CHARTERS WHITE will read a paper on "The Salivary Glands of Insects" at the following meeting, December 4th.

A VALUABLE pamphlet, entitled 'Annotations on Anæsthetics,' by Mr. Samuel Osborne, F.R.C.S., reprinted from the 'St. Thomas's Hospital Reports,' vols. x and xi, has reached its second edition, and we should strongly advise all Dental Surgeons who administer anæsthetics to obtain a copy, as it gives in a clear and concise way all that should be known on this subject.

THE Annual Dinner of the Past and Present Students and Friends of the National Dental Hospital and College will be held on Thursday, the 23rd inst., at the Guildhall Tavern, City, Dr. Broadbent, Consulting Physician to the Hospital, will occupy the Chair.

Manipulative Miscellany.

All instruments or articles wished to be described under this heading are requested to be sent *for inspection* to the publishers not later than the 8th and 23rd of each month, they can be returned in a few days. Where, from the size or otherwise, this is impracticable, a clear and minute description will be sufficient; the sole object being to give practitioners a description of everything new, on its own merits, and without any intention or wish to pit one against another. All makers, vendors, and inventors, are invited, with strict impartiality, to contribute towards this end.

ZENCH'S COFFER-DAM CLAMP PLIERS COMBINED WITH LIP HOLDER AND REFLECTOR.

OBJECTION by the public is fast disappearing to the application of the coffer-dam. They are getting to understand that superior work in certain cases can only be done with the addition of this contrivance. When the instrument referred to above was first put into our hands we feared its complicated construction would wreck its popularity, but by a careful examination of its several parts, and one or two attempts at applying it, soon dispelled the idea. All those who use the coffer-dam remember the difficulty with which it is applied to shallow molars, more particularly where you wish to place the clamp after the rubber is on the tooth; when the clamp is put on first there remains but little difficulty in dealing with the remaining part of the process. By Zench's invention the rubber and clamp are carried together, and by means of arms and wings, which form lip-protectors, the tooth upon which the coffer-dam is to be placed comes immediately into view.

An examination of the accompanying illustrations will clearly point out the several parts, and it remains only for their use to be described.

To render our description clear, we may imagine we wish to apply the coffer-dam to a lower molar of the left side; a clamp is selected which will grasp the tooth securely, then the corresponding tensor is adjusted by placing its forked

ends into the holes in the clamp. The reflector, which consists of a piece of highly-burnished steel, with a hinged arm which can embrace any part of the arch of the clamp, must

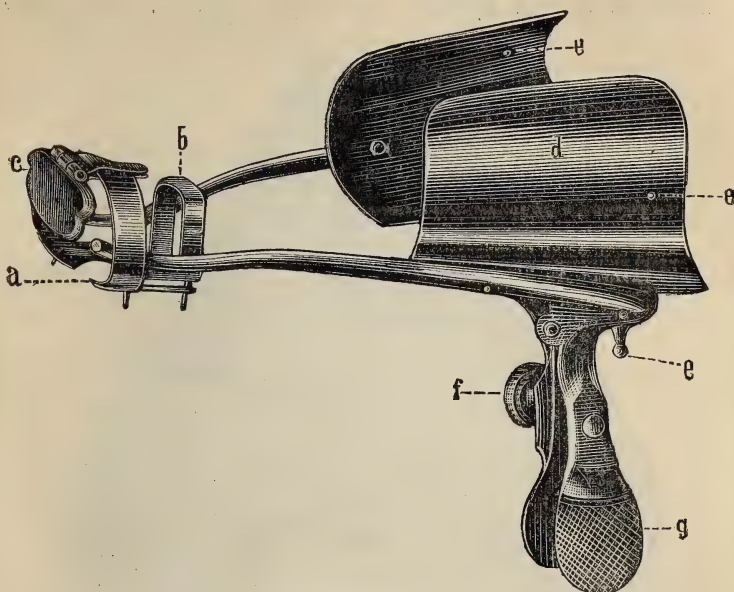


FIG. 1.—*a*, clamp; *b*, tensor; *c*, reflector; *d*, lip holder; *e*, *e*, *e*, buttons; *f*, thumbscrew; *g*, handle.

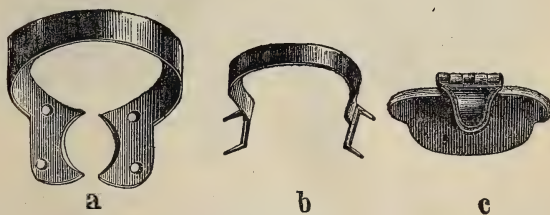


FIG. 2.—*a*, clamp; *b*, tensor; *c*, reflector.

next be put on. By means of the thumb-screw the arms of the clamp pliers can now be regulated so as to seize the clamp firmly. We then take a sheet of india rubber and pierce a hole, which when stretched will encircle the neck of the tooth, and turning the clamp over so as to see the ends of

the tensor appearing through the holes, the clamp being already in the pliers, we stretch it over the four points of the tensor so that the ring of the clamp is brought into full view; the folds of the india rubber are then gently pulled so as to be caught by the buttons (see Fig. 3). All is now

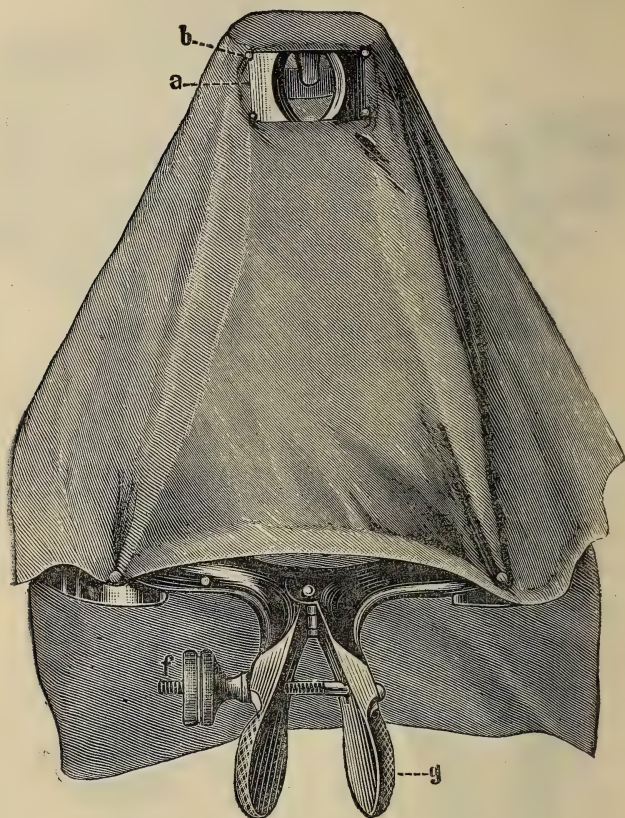


FIG. 3.—Showing the coffer-dam and apparatus ready for application. *a*, clamp; *b*, tensor; *f*, thumbscrew; *g*, handle of clamp pliers.

ready for the mouth, the india rubber and clamp are ready to slip over the crown of the tooth, the lip-protectors and arms of the clamp pliers extend so as to leave the arch of the clamp fully exposed, and therefore leaves no difficulty in placing it on the tooth. When the clamp is in its place

the thumbscrew is turned so that it may be relieved and seize the tooth firmly. The tensor is then removed, and in so doing the little points which held the india rubber—which is to go round the tooth—extended, are withdrawn, and the coffer-dam is complete.

Whether the clamp pliers remain in the mouth or not is left to the operator. In teeth at the back of the mouth it is very useful, as it keeps the tooth well in view, but when on a bicuspid the arms are so long and the leverage so great that we fear if they were touched the clamp would become disarranged. We might suggest that, to increase its usefulness, the arms were made with an extension movement.

The apparatus is patented by Mr. George Poulson, of Hamburg, and Mr. Ritchie, of Great Marlborough Street, London, has brought it under our notice.

CONE SOCKET INSTRUMENTS.

MESSRS. JOHNSTON BROTHERS, of New York, patented an invention ten years ago, which consisted of a handle in which various points could be adjusted, and since then several modifications on the original pattern have been added. Not for one moment imagining that fine instruments will make good fillings, yet there is an advantage in having a clean set before you. With the various preparations we are compelled to use in practice, our instruments become sadly discoloured, and the workshop boy, exhibiting a superabundant amount of energy, generally succeeds in obtaining a high polish to the handles to the complete destruction of the points. The patterns we are inspecting consist of nickel-plated handles supplied with screw sockets, so that the points of excavators, pluggers, and stoppers may be fitted, the different sizes varying with the point required, as it would be unnecessary to have an excavator in a handle of the weight suitable for a plugger. They have a rough exterior to prevent them slipping in the fingers, with highly-burnished ends, the roughness caused by a variety of patterns.

We think that as the points can be obtained at a much

lower cost without the handles, that this introduction is a good one, for directly a point is broken it can be removed to make room for a new one, and by means of a little whiting and a leather all the instruments are kept clean and bright.

Mr. G. W. Rutterford, of Poland Street, is the agent, and has sent several for our inspection. The firm of Johnston Brothers is now incorporated with the S. S. White Dental Manufacturing Company.

IMPROVED CONE-POINT AND REGULATING HAND-PIECE.

THE burring engine is generally regarded by the patient as an instrument of exquisite torture, and we must admit our sympathies are on their side if it is not in good working order and carefully handled. The ultimate advantages gained by the patient from its use can be so closely estimated that it is seldom we are called upon to abandon it, and looking upon it from our side of the question it is well we should not, for the time and labour saved removes no small amount of the fatigue occasioned by everyday practice. One annoyance which is very trying to the patient is the vibration, which is the result of a loose hand-piece, and Messrs. Ash and Sons have apparently heard of it, as they have devoted their attention to obtain a modification of their original hand-piece, which will enable any looseness the result of wear to be overcome.

Concluding that a great many features are identical with the original, we have only to describe the special parts. The case was originally attached to a central tube, the spindle revolving within, and to obtain a steadiness of the whole, the mandril was pulled tightly up from the hand-piece to the screw clamp near the line pulley, thereby causing a great strain being put on it; furthermore, there was a fixed washer, which held the central tube but was subject to wear, and when that took place a most unpleasant rattling resulted, which is beyond the means of the operator to rectify. In place of the fixed central tube there is a

loose one, with a movable washer, which can be renewed when it is worn, and by means of a movable screw washer the whole can be made perfectly steady, and kept so without the least trouble.

UNIVERSAL CUSPADOR CLAMP.

IN this invention we have a ready and sure means of having a spittoon attached to the operation chair. Standing at right angles from a bracket is a strong metal arm which, after being carried forward about two inches, divides into two semi-circular blades, which are hinged so as to allow them to extend or approach when required. They are joined together by means of a steel spiral spring, which keeps the ends in close proximity. To apply the spittoon the semi-circular blades are separated, and the neck of the spittoon is slipped in, when it is held securely. A lateral oscillating movement is also present to enable the cuspador being kept level, no matter in what position the chair is placed; and a stop-bolt for three different positions, which prevents the cuspador running away from the chair, a thing which is quite necessary to protect the carpet from injury.

Mr. H. D. Justi, of Philadelphia, is the sole manufacturer, and Mr. J. Ritchie sent us the sample pattern for our inspection.

DR. C. H. STOKES' NEW CLAMPS FOR USE WITH BIBULOUS PAPERS, &c.

NAPKIN HOLDERS have from time to time been invented, but in their application much depends upon the will of the patient to keep them in apposition, any sudden pain or cough immediately upsetting your efforts to keep the part free from saliva.

The little contrivance before us is a clamp to which is attached three plates in different positions. The one for the teeth of the right side will serve that purpose, and a glance at the illustration will materially assist us in rendering our description clear.

That on the right side of the ring of the clamp is a

plate which, being bent downwards, allows a thick roll of bibulous paper to be retained between the cheek and the teeth. Another plate on the opposite side acts similarly, only having a large oval hole, admits of the paper being passed through and therefore held down, the tongue being protected by a third plate, which stands almost vertical, and will at the same time act as a reflector. In those cases where a great time is not required, such as excavating cavities and putting in small amalgam fillings, this will be found to be invaluable. As the clamp grasps the tooth quite firmly, there is no fear of it becoming disarranged.

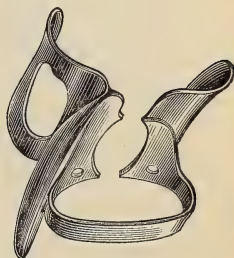
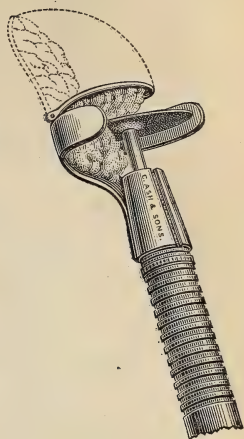
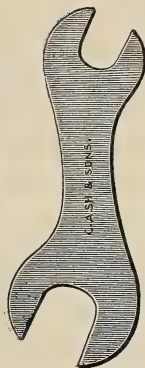
Special forceps are required to place them on, which are not altogether useless for the other clamps, as there is a groove for this purpose. Messrs. Ash and Sons are entrusted with their construction, which is a sufficient guarantee for their delicate finish.

NEW ARTICULATING PAPER.

WE have received a sample of new articulating paper manufactured by Messrs. Field and Tuer upon the recommendation of Mr. Barkley, L.D.S. Eng., of Worcester. The great feature is that it is yellow, which readily shows where the bite is pressing on rubbers of dark colour, and, knowing the difficulty there is in detecting the presence of the dark blue tints, this paper will in those cases recommend itself. It is made on thin tough paper, and will mark from either side.

WE have received for notice a most ingenious "Clock Arrangement to Gas Valve," for turning out the gas of a vulcanizer when the appointed time has expired, from the Dental Manufacturing Company, but want of space compels us to defer the description of it till our next issue.

ERRATUM.—In the notice of a New Drop Bottle in our issue of October 2nd, we gave the name of Mr. Thomas Rodway as the inventor; it should have been Mr. Thomas Rowney of Hull.



Literary Notices and Selections.

IS THIS A NEW IDEA?

By L. G. NOEL, M.D., D.D.S., Nashville, Tenn.

BULWER says, "Often an idea perks itself up and seems to say, 'Look at me! I am perfectly new. I am an *original* idea. You never saw me before!' But upon turning it round, and examining it upon all sides, I say 'No! you are not new, neither are you original; I recognise you as a very old acquaintance.'" For some time it had been my practice, in some deep, compound cavities, where the teeth were frail and the decay extended high up on the neck of the tooth and under the gum, to fill at the gingival border with Hill's stopping, or some other good preparation of gutta percha, all that portion of the tooth through which thermal changes are liable to be conveyed to the pulp, and leaving the coronal or grinding surface portion to be finished with amalgam, thus getting the non-conducting property of the gutta percha where it is so much needed, and protecting it from friction and attrition in mastication, by the hard amalgam. I like this combination so well that I called my associate's attention to it, and he was delighted. Here was a permanent, non-conducting filling, easily and quickly inserted, promising durability and usefulness. Oh, what distress these cavities had given us! How we had filled with cement, to find in a few weeks our cement melted out like so much snow by the acid mucus of the gums, and how we had stuffed them with gutta percha to wear out in mastication—all looking to the time when we could venture to fill with gold. The combination came like an answer to prayer, and it was none the less good because all the while Dr. Quimby, of Liverpool, was using it, and because he had the honour to set it forth in his essay read before the New York Odontological Society, and published in the 'Cosmos' for April, 1882. We read it aloud to our associate, and

remarked with a sigh, "We had intended to publish it, but now—." Dr. Quimby did not mention the combination of gutta percha and gold for similar cases. Absurd as it may seem to some of your readers, we are using it, *and it is a good thing*. At first blush it would appear that the gutta percha is too soft and yielding for a foundation to build gold upon, but it can be done. I manage it in this way: After adjusting my rubber dam, if I have two of these cavities in adjacent teeth, I fill the bases of both together, carrying the gutta percha across in continuous blocks from one to the other, until I have filled as much of the cavities as I desire to cover with gutta percha; then, with cylinders of Abbey's old-fashioned non-cohesive gold, I get a basis for my cohesive foil, with which I finish and secure the whole. After dressing down the gold, I pass the thin blade of a burnisher, shaped like an ordinary gum lance and heated in a spirit lamp, between the teeth, separating the gutta percha and burnishing it well into its place. If there is but one tooth, the gutta percha may be packed well over the septum, and allowed to project against the adjacent tooth; the condensation of the soft gold upon it will merely serve to settle it, and spread it well against the walls. The tendency to slip and mash out of the cavity is so slight that it may be controlled in isolated teeth by grooving the cavity, as for non-cohesive gold. Doubtless others have been using this method; it may not be a new idea, but it appears so to me now.—*Ohio State Journal*.

IRREGULAR DENTITION.

PROFESSOR JACOBI, of New York, in a clinical lecture, gives a case in which a somewhat abnormal condition presented itself. He says: "Here is a case which I have brought before you because it gives me an opportunity to say something to you about irregularities of dentition. This child is eleven weeks old, yet it has two molar teeth, which were noticed before it was five weeks old. The mother says

that she noticed the first molar tooth before the child was one month old. It appeared in the left upper maxilla, and the day afterwards another molar tooth was found to exist opposite in the lower jaw. This is a very peculiar history. There is nothing else the matter with the child, the mother says, and all her other children are in a normal and healthy condition. Now, you know it is very uncommon to find molar teeth developing as early as they probably have in this case. Teeth will usually appear about the seventh or eighth month, but then it is the *lower* central incisors. You remember in the case of premature cranial ossification, which we had the other day, I made the point that it was the upper central incisors which had appeared first, there being a closer connection between the skull and upper jaw than the skull and lower jaw. Here the appearance of teeth at all, at so early an age, is quite abnormal, and it is probable that they were there before the mother noticed them. They may and probably have been congenital. Congenital teeth are very small, and occur very rarely. I, myself, as I am in an exceptionally favorable position to observe such anomaly, have met with that anomaly perhaps twenty times. This is quite an unusual number, for there is many a practitioner who never met with a case. But a congenital molar tooth I have never seen, nor do I know of any that has been reported. There have been many cases of congenital teeth recorded, probably because of their rarity, and the history of congenital teeth is very old. Pliny, the younger, states that the celebrated Marcus Curius, consul of the Roman Republic 270 years before our era, had a full set of teeth at birth. This was the reason of his being named Dentatus. The same author mentions two other instances of children who had their teeth at birth. Zoroaster, the Persian legislator, is reported to have had all his teeth at birth. Louis XIV, of France, was born with two teeth, as was also his secretary of state, Cardinal Mazarin. Richard III, of England, and Mirabeau both had congenital teeth. Haller has collected a list of nineteen cases of congenital teeth, and there are many other instances of this abnormality besides these which I have mentioned to you, which are recorded

both in ancient and modern literature. The journals of the last ten years continue to give a number of such cases. These congenital teeth are usually small, ill-shaped, and have no root. They only hang in the gums. They differ from genuine teeth in that they are less firm and solid, their enamel is thin, and not formed at all in some places, and they are not inclosed in the dental alveolus. Such teeth often prevent the child from nursing, and cause the nipples of the mother to become very sore. They should then be removed, which can be done without difficulty. Often an ordinary dressing-forceps will be sufficient for the purpose, or they may even be detached by the finger. When such teeth are removed, the real deciduous teeth, as a rule, appear afterwards. In a number of cases which I have followed up new temporary teeth have appeared, although it has been stated, erroneously, that no temporary teeth would appear at all previous to the eruption of the permanent teeth. These congenital teeth seem to be entirely supernumerary, and I regard them as an accidental connective-tissue formation. The upper tooth here is too firm to justify an attempt to remove it at present. The lower molar I was able to remove with my finger. There is one fact about congenital or abnormal teeth which it is important that I should mention. The children are often not in good health. They are cases in which rachitis develops at a latter period, and may usually be considered a symptom of a morbid constitution, which will require anti-rachitical or anti-scorfulous treatment for its repair. It is then an anomaly which is by no means welcome. Premature dentition, premature walking, and premature ossification of the cranial bones usually coexist.

“Another variation in the appearance of teeth is their eruption at a period later than the normal one. One case is on record where a girl got her four temporary teeth when thirteen years old; another where a child of five or six years had only a few incisors; and there is a case reported by Smellie where the first tooth appeared in the twenty-second year of life. There is a very small number of cases in which the entire absence of teeth has been noted; also where certain

of the teeth have been absent. Storch describes the case of his own daughter, who had no canine teeth, and I myself have seen a lady with but two upper incisors, and lately a few children in the same family with the same anomaly. The molar I present here is very flat, its surface large enough, its depth very trifling; it shows four little prominences representing the diminutive roots. If you care to read more on the subject, I refer you to my 'Dentition and its Derangement,' New York, 1862, or the 'American Medical Times' of that year."—*Dental Cosmos*.

RESTORATION OF THE HEART'S ACTION WHEN IT HAS CEASED TO BEAT.

IN the 'British Medical Journal' Dr. Jago suggests that when the heart fails in cases of anæsthesia, &c., we should prick it with a fine long needle, but gives no cases. The following cases, by Dr. Reid, are interesting. He says: On reading Dr. Jago's article, it reminded me of an experiment in my college days. I do not remember what induced me to kill a mouse by a blow on the head, and rip it open to see the heart beat. It did not. I pricked it with a needle and set it a-going. It stopped after a time; then I gave it a second prick; and a few pulsations were distinctly seen. When I was in petticoats, my father was sent for to a girl in a fit. He was out, and when he came home was informed of the fact. "How long since? and any second message?" Being told he thought he need not go, my mother suggested he "ought to go," which he did. He found the girl dressed in her grave-clothes, and "laid out" on a linen-covered table. He examined her, and found some warmth over the heart. He ordered hot water to be brought, not scalding hot, and poured it into a jug, tore her shroud open, stood on a chair, and poured a continuous stream of hot water, until the throbbing of the heart was distinctly seen. That girl was the mother of several children before I left Scotland, in 1848. My mother used to laugh, and take her share of the credit of her restoration to life.

An old man here, Robert Robinson, several years before his death, took a fit, and apparently expired on the floor, where he was lying pulseless and breathless. The heart had ceased to beat, and I was told that "he was beyond any doctor's power now." I felt some warmth over the heart, and I tried my father's remedy; and to the wonder of spectators, the septuagenarian revived, and lived several years afterwards. Hot water can easily be obtained; and no one can object to such an experiment.—*Braithwait's Retrospect.*

A SERVANT-GIRL, sent to me by one of my patients to have a tooth treated for alveolar abscess, presented the usual appearance of that disease—the cheek so enormously swollen as to nearly close the eye. On examining the mouth the left superior first molar was found to be largely decayed, a delicate probe discovered the pulp to be still living, and the tooth itself was found to be not in the least sensitive to pressure; evidently the cause could not be here. An examination of the remaining teeth on that side, though difficult, considering the swollen condition of the cheek, discovered them to be all in a healthy condition. Passing the finger along the bone no swelling could be found, but this examination made it plainly evident that the tumefaction was entirely in the cheek. Placing the finger of the left hand on the inside of the cheek, and manipulating the outside with the right, no fluctuation or special induration could be discovered. Lifting out the cheek to examine its inner surface, there appeared at the orifice of the duct, what seemed to be a small curd of pus; pressing upon the cheek, and with a pair of pliers catching at the supposed suppurating matter, I drew from the duct about an inch of broom-corn!

It appeared that the girl in sweeping a room would pick up the small pieces of broom-corn that dropped from the broom and put them in her mouth until she came to the window, when she would spit them out. This piece had

evidently tilted against the opening of the duct and been driven in by the lower teeth on closing the mouth.

Nothing further was done, and in two or three days she was entirely well.—*Dental Cosmos*.

Reports of Societies.

STUDENTS' SOCIETY OF THE DENTAL HOSPITAL OF LONDON.

ORDINARY MEETING, OCTOBER 9TH, 1882.

ARTHUR S. UNDERWOOD, Esq., M.R.C.S., L.D.S., President,
in the Chair.

THE PRESIDENT, on taking the chair, made some excellent remarks in reference to the death of Mr. J. T. Clover, also upon the loss of Mr. Claude Rogers as Demonstrator, and his successor, Mr. W. Hern.

The minutes of the previous meeting were read over and confirmed.

Mr. E. NORRIS was balloted for and elected a member.

The following gentlemen were proposed for membership:—Messrs. R. Levason, W. R. Ackland, G. W. Trott, R. Fairbank, Parkinson, Stainer, Brewster, Crocker.

Casual communications were made by the President, who also presented to the museum a curious odontome. Mr. J. J. Andrew presented a model; Mr. McStay a fractured bicuspid; Mr. W. Harrison, L.D.S., a four-rooted lower molar; Mr. W. Hern, M.R.C.S., L.D.S., a bicuspid which had a longitudinal and transverse fracture seven months previous to extraction; Mr. A. H. Tester mentioned a case of neuralgia which he had successfully treated.

The PRESIDENT then called on Mr. C. S. Buckland for his paper on "Stomatitis," which will be found at page 1025.

A discussion followed, in which the following gentlemen took part:—The President, Messrs. R. H. Woodhouse, M.R.C.S., L.D.S., F. Canton, M.R.C.S., L.D.S., W. Hern, M.R.C.S., L.D.S., F. Newland Pedley, M.R.C.S., L.D.S., C. Robbins, L.D.S., H. G. Blackmore, L.D.S., and J. Petherbridg.

A vote of thanks was given to Mr. Buckland for his excellent paper.

Dental News.

VACANCIES.

DENTAL HOSPITAL OF LONDON, Leicester Square.—Administrator of Anæsthetics. Applications by November 19th.

DENTAL HOSPITAL OF LONDON, Leicester Square.—Dental House Surgeon. Salary £40 per annum. Applications by November 13th.

ASHENHURST FUND.

	£	s.	d.
Edward Bartlett, Esq. (London)	1	1	0
Mr. J. Cohen (pupil)	0	2	6
F. J. H. (Coventry)	0	2	6

Per Messrs. C. Ash & Sons :

W. H. Griffiths (Newport, Mon.)	0	10	6
"Nemo"	1	1	0

Per Mr. Beavis (Newport, Mon.), 4th remittance :

Messrs. Osborne and White's Assistants	0	8	6
The Friend of an Assistant	0	1	6

Per the Dental Manufacturing Company :

<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
F. J. Vander-	D. 2 6	W. P. 1 0
pant 21 0	B. P. 2 6	H. 1 0
J. 21 0	J. C. Y. ... 2 6	J. L. 1 0
L. R. 10 6	G. H. 2 6	E. G. 1 0
J. F. ... 10 6	E. H. W... 2 6	R. K. 1 0
S. B. 10 6	G. O. W. ... 2 6	T. 1 0
J. R. 10 0	C. S. L. ... 2 6	S. 1 0
W. B. B. ... 10 0	D. A. W. ... 2 6	E. F. 1 0
G. Brunton 10 0	G. W. P. ... 2 6	A. W. H. ... 1 0
G. D. 6 0	G. C. 2 6	A. C. 1 0
J. L. L. 5 0	F. W. 2 6	F. H. 1 0
A. Pitowsky 5 0	F. C. R. ... 2 0	J. J. H. 1 0
W. Bates ... 5 0	E. M. 2 0	J. G. 1 0
C. S. 5 0	H. B. ... 2 0	J. H. 1 0
D. D. H. ... 3 0	E. P. 2 0	W. Yeates... 1 0
J. C. 3 0	J. P. 2 0	J. A. R. 1 0
R. H. 2 6	T. G. 2 0	

Dental Manufacturing Company's Employés (2nd List) :

R. A. W. ... 5 0	J. S. 2 6	J. M. 2 6
J. C. 1 0		

Subscriptions will be received by Messrs. C. Ash & Co., the Dental Manufacturing Co., Mr. Rutterford, Messrs. Jamieson, and the Editor of this Journal.

To Correspondents.

1. Communications intended for insertion in the ensuing number must be forwarded to the Editor, at the Offices, 82, Mortimer Street, Regent Street, London, W., by the 8th and 23rd of the month, and must be duly authenticated by the name and address of the writer.

We cannot undertake to return communications unless the necessary postage stamps are forwarded.

It is earnestly requested of our correspondents that their communications be written on one side of the sheet only; and we also beg to call particular attention to the importance of a carefully-penned signature and address.

All communications relative to subscriptions and advertisements are to be addressed to the Publisher, Mr. J. P. Segg, 82, Mortimer Street, Regent Street, London, W.

The Journal will be supplied direct from the office on PREPAYMENT of subscriptions as under:

Twelve Months (post free) 14s. 0d.

Post-office Orders to be made payable at the Langham Place Hotel Office, to G. E. Skliros, 82, Mortimer Street, Regent Street, W. A single number sent on receipt of seven (penny) stamps.

ANSWERS TO CORRESPONDENTS.

“AN OBSERVER.”—We regret to say we have no control over the Corporate Medical and Surgical Bodies. If the announcement is obtained in spite of a formal prohibition a fraud is undoubtedly committed.

“BONÂ FIDE.”—The British Medical Council deemed the alteration necessary, so we recommend you to refer to the ‘Medical Directory’ for the list you require.

T. HUGHES.—Your letter respecting the advertisement was received too late, as the same was already in type.

Communications have been received from Messrs. W. Barkley (Worcester), W. Harrison (London), Gurnell Hammond (London), Thos. Rowney (Hull), C. Nuttall (Bacup), J. Ritchie (London), F. Henri Weiss (London), — Dunn (Florence), Geo. Barth & Co. (London), G. W. Rutterford (London), Ash & Sons (London), Field & Tuer (London), T. Hughes, F. P. Parson (Glasgow), Dental Manufacturing Company, J. H. Parkinson (Glasgow), — Beavis (Newport).

BOOKS AND PAPERS RECEIVED.

Missouri Dental Journal.’ ‘Pharmaceutical Journal.’ ‘British Medical Journal.’ ‘Lancet.’ ‘Medical Times and Gazette.’ ‘Leeds Mercury.’ ‘Ohio State Journal.’ ‘Annotations on Anæsthetics.’ ‘L’Odontologie.’ ‘Journal of British Dental Association.’ ‘Le Progres Dentaire.’ ‘Chemist and Druggist.’ ‘Dental Cosmos.’ ‘New England Journal of Dentistry.’ ‘American Journal of Dental Science.’ ‘Deutsche Vierteljahrsschrift.’ ‘Gazette des Hôpitaux.’

NOTICE.—We desire that it may be clearly understood that our pages are open to all for free expression of their views on matters connected with our profession. We only ask for terseness of expression and MODERATION IN TONE.

When otherwise unobjectionable, difference of political or other opinion will never be regarded by the Editor as a disqualification for the admission of any communication to the pages of the BRITISH JOURNAL OF DENTAL SCIENCE.

British Journal of Dental Science.

No. 356. LONDON, NOVEMBER 15, 1882. Vol. XXV.

THE ETIOLOGY AND PATHOLOGY OF DENTAL DISEASES: WHAT WE KNOW, AND WHAT WE WOULD LIKE TO KNOW.

By HENRY SEWILL, M.R.C.S., L.D.S. ENG.*

(Concluded from page 1042.)

LASTLY, we would like to know under what conditions calcification of an exposed pulp takes place. We have in our museums remarkable specimens of calcification—for instance, in pulps exposed by fracture of a tooth—yet I am not aware that there has ever been demonstrated calcification of a pulp following after lapse of time upon the operation of capping. From the pulp inflammation extends to the Dental periosteum, and to the pathology of the morbid changes there ensuing may be applied equally the general observations which I have made respecting the pulp. The pathology of dental periostitis is, in its essence, the same as that of other periosteal structures, and, as results, we get fibrous deposit, exostosis, necrosis, or absorption. The modification of the processes by the anatomical peculiarities of the part may be exemplified by the fact that the intimate blending of the cement with the dentine prevents exfoliation in necrosis such as we might expect in other bones under analogous conditions. As our general knowledge of the pathology of periosteum and bone extends, so will be enlarged our knowledge of the pathology of dental periosteum and cementum.

* Read at the Annual General Meeting of the British Dental Association at Liverpool, August 26th, 1882.

Very distinct from caries, yet sometimes confounded with it, is the disease commonly known as erosion. Like caries, it is a destructive process, commencing on the surface of the teeth, and proceeding inwards; but there the resemblance ceases. In erosion, the tissue that suffers most is the enamel. The eroded cavity is hardly ever undercut; its surface is always fairly hard and polished. Any surface of a tooth may be subject to erosion. Its appearance in some cases would seem to suggest friction of the bite as a cause; but the fact that it attacks several surfaces of the same tooth, and even teeth that have no opponents, shows the insufficiency of that explanation. Though most commonly attacking the necks of teeth, it not infrequently commences on or near the cutting surfaces. It occurs in teeth in which caries is actually going on at the same time; it shows no preference for fissures or sheltered crevices, but freely destroys those surfaces most readily washed by the tongue and the saliva. Its cause has never been clearly traced to the excessive use of the tooth-brush, and it is found in patients who never clean their teeth. Erosion presents a condition exactly similar to that which might be expected if the lime salts were slowly dissolved out by acid, and the surface kept polished by constant friction. The morbid anatomy of erosion is admirably described by Mr. A. Underwood in a recent number of the Journal of this Association. A bicuspid tooth had each of its surfaces destroyed as by a clean slice, very little enamel remaining. In the same mouth erosion of an upper central had affected both the lingual and labial surfaces, until a very thin partition alone remained. A section of one of the teeth included, fortunately, not only the eroded surface, but also a point where caries was going on in the same tooth. The caries was very dark, fairly soft, and spreading as usual into the dentine, leaving a smooth plane of dentine exposed. Microscopically, while the caries presented the characteristic appearances of that disease, the eroded surface was not, apparently, altered at all, except that there were a great many irregular cracks running inwards at right angles to the plane of the surface. This, however, might be, perhaps, due to tearing in cutting the section.

While in caries one of the main agents is micro-organisms, which most readily destroy the more organic tissues, erosion presents the result of purely acid solution—a very acid condition of the buccal secretions, assisted by the ordinary friction to which all teeth are exposed; but without the co-operation of organisms.

In brief, of this we are certain with regard to erosion, that it can be due alone to chemical and mechanical causes acting externally to the teeth, and we would like to know exactly what governs the incidence of the disease, why it attacks certain teeth by preference in each case, and why certain surfaces only of those teeth?

The limits of the time at my disposal will allow me to refer to the etiology and pathology of only one more disease, and I am sorry to admit my remarks must consist of a confession of our ignorance, and a mere enumeration of things we would like to know. The disease chronic suppurative wasting of the alveoli, seems, if not a disease of modern life, to be at least on the increase at the present time. We are all familiar with it. It commences as inflammation, appearing to affect simultaneously the edge of the gum and the alveolar periosteum. There is a discharge, usually slight in quantity, of muco-pus from within the edge of the gum. The gum and alveolus slowly waste until the tooth is lost. There is a deposit of tartar around the denuded surface of the tooth. It may affect one tooth only, but more commonly several at the same time, subsequently extending to the whole set. The inflammation is usually extremely chronic, with occasional subacute and rarer acute exacerbations. We do not know whether this malady is of local or constitutional origin. We do not know which tissue is locally the seat of the initial lesion. M. Magitôt has recently affirmed that it is always present in diabetes. I have seen two cases since he drew attention to the subject in diabetic patients, but I have seen many cases in which no malady could be discovered, except, perhaps, disturbance of the general health due to indigestion and discomfort arising from the disease itself. It has been stated, but I have seen no verification of the statement, that the affection is really

due to either ulceration or caries of the alveoli progressing from their edges onwards to the depth. These statements, as well as the whole subject of the morbid anatomy of this disease, might have light thrown upon them in the post-mortem room. There must be a considerable number of subjects to be found in the dissecting room in whom this malady is present; and I commend this suggestion to our pathologists.

Although I have left many topics of my subject altogether untouched, and have by no means exhausted those with which I have dealt, I am sure I am beginning to trespass sorely upon your patience, and I must draw to a close. We need not be discouraged when we contemplate the sum of our knowledge and compare it with the mass of facts for which we cannot account. We have the satisfaction of knowing that in many of the diseases which we have to combat our treatment is based on sufficiently solid ground to make it certain and effective. There is no surgical disease the treatment of which is more satisfactory than that of caries. Where we most fail is in prophylaxis; or, perhaps, more correctly, in prevention of the main predisposing cause, inherent structural imperfections of the tissues.

Not to speak of that which falls outside the scope of my paper, such as what pertains to modes and means of treatment, there is ample work in the elucidation of the problems I have mentioned to satisfy the scientific ardour which animates many of that bright band of young men who are now entering our profession. They may find worthy examples for emulation in those distinguished men whom time has inevitably removed, and in those whom we still possess amongst us. Let us hope that these young recruits may receive their inspiration from such true men as Bell in the past and our distinguished leader John Tomes in the present. These labourers who toiled in the right scientific spirit. They recognised, as the genuine seeker after truth must always recognise, that for great results science must not be pursued in a spirit of narrow utilitarianism, that the worker must not be for ever crying *cui bono*? for ever asking of what use is this new knowledge? He must be content to feel that

there never was yet established a scientific fact, isolated or useless as it might at first seem, which did not in the end help in promotion of the happiness of mankind. It is somewhat the fashion to make light of Dental diseases and the suffering they cause, probably because they do not involve direct danger to life. But those who practise Dental Surgery know that these diseases are often serious enough in themselves to render life almost as wretched as it can be rendered by physical suffering. Those fortunate explorers whose labours lead to a more exact knowledge of these diseases may perhaps be disappointed of their due meed of honour and fame; but nothing can deprive them of a reward more desirable than these, and sweeter, perhaps, the greater the self-sacrifice incurred; they may count upon an inestimable solace in the consciousness that they with their own hands have added even one atom to that store of knowledge which goes to the assuagement of human misery and the prolongation of precious life.

A PLEA AGAINST PULP EXTERMINATION.

By FREDERIC ROSE, L.D.S. Eng.

(Concluded from p. 1046.)

Now, if there has been much inflammation in the pulp, before we stop the tooth we want to provide against a contingency, which nearly always arises, viz. the accumulation of serum and gases under the filling, causing pressure and pain, and the necessity for removing the stopping. Before I saw Mr. W. Victor Ditcham's valuable contribution to the last November number of the 'Record,' I used a very clumsy way to effect this, though it sufficed; but since then I have tried his method and am delighted with the results. His method can be applied to gold fillings as well as plastics; as I did it, I had to content myself with plastics. I used to

lay a piece of silk thread across the exposure, fill over it, and when the filling was in, withdraw it while I firmly kept the stopping steady with the thumb of the other hand. But I recommend Mr. Ditcham's plan as much neater and more workmanlike, and refer my readers to it, *loc. cit.* After from ten days to a fortnight, during which time one or two light mastic dressings may be changed in the tube to keep out the food and saliva, the drainage tube may be filled up. If I think it advisable to use any medicament to the pulp, I prefer two or three coats of weak solution of iodine painted on to the exposure with a camel-hair pencil. I avoid carbolic acid strictly, except of an antiseptic strength. It is often advisable to administer a purge during the local treatment, to assist nature in subduing the inflammation.

In cases of simple exposure the same treatment is adopted, leaving out the tube. I prefer cork next the pulp, and for plastic fillings it is all that is necessary; but for gold fillings I use a gold, platinum, or quill dome-shaped disc over the cork, to give strength to fill upon.

I omitted to mention the object of the varnish. It is to render the dentine impervious to the shocks from thermal changes through the metallic filling, which it certainly most effectually does. The principle of the treatment is that the moisture in the protoplasm in the tubes, by capillary attraction, draws up the ether in which the gum is dissolved, and along with it particles of the gum, so hermetically sealing up every tube, and practically capping each individual pulp filament.

I append a record of one of my early efforts in this direction written from memory, assisted by the record in the books of the hospital; and alongside it one I have in course of treatment at the present time, which I expect to have completed successfully before my paper goes to press.

From August 1st, 1881, to August 23rd, 1882, the results of my treatments of unmistakably exposed pulp are as follows:—

53 cases treated on foregoing plan.

7 caused so much pain after the warm-air treatment as to necessitate destruction.

5 cases exterminated either by arsenic or barb without having recourse to treatment.

N.B.—In every case where the pulp has been exterminated the treatment has been dictated, either by the low vitality of the patient, or through a want of patience to go through with the case.

48, total number of successful cases.

These cases exclude all my experiments in the hospital.

CASE 1. March 10th, 1881.—Margaret A—, æt. about 30, sent upstairs from extraction-room to have a left upper first molar treated, the second bicuspid having been extracted that day without alleviation of the suffering. On questioning patient I learned that the pain she had suffered, and was then suffering, was of the acute shooting kind, pointing distinctly to the fact that a living pulp was in a state of inflammation. On examination I found a small round cavity on the mesial surface of the molar, which the extraction of the bicuspid had revealed. I fixed the dam on and began to excavate, when, to my surprise, I found the small opening led into a very large cavity. I broke down the crown with a mallet and chisel, and then found that the tooth was a mere shell of enamel. I wiped out all soft pulpy material, and dried off with warm air, which reduced the acute throbbing to a slight dull sensation. On carefully excavating the softened dentine, I found a pulp exposed almost to its full extent, and in an acute state of inflammation; and further traced the decay through the distal surface, there being a cavity on this side somewhat similar to that on the mesial aspect. I accordingly broke in the enamel over it, leaving the two perpendicular walls of enamel on the buccal and palatine aspects. I now painted the surface of the pulp with two or three coats of weak solution of iodine, and dried off again with the warm air; then painted on a coat of collodion, and covered all up with a mastic dressing, and removed the dam. Patient left with a slight feeling of pain still in the tooth.

15th.—Renewed dressing with dam adjusted. Painted pulp again with iodine, this time covering all up with gutta percha.

25th.—Gum a little swollen, and pain had returned slightly.

Adjusted dam, and cut a cylindrical hole in the centre of the stopping, with a hot excavator, down to the pulp, which was very sensitive to touch. Inserted a dressing of creasote and tannin through the hole.

29th.—Great swelling on gum. Tongue furred, and the patient evidently in a very bad state of health. I took out the dressing, expecting to find the pulp dead. It was, however, alive, but very much inflamed. I accordingly recommended a purge, and prescribed syrup of the iodide of iron internally, leached the gum freely, and inserted a very light dressing of creasote and tannin, previously painting the pulp with iodine.

April 14th.—Patient had taken prescription for a short time, I forget how often, and also purged herself freely. To-day she presents quite a different appearance from last time I saw her. On taking out the dressing I found the pulp in a very satisfactory condition. All pain had ceased some days previously. I renewed the dressing of creasote and tannin.

21st.—Pulp seemed quite healthy, so I filled up the hole in the centre of the filling with gutta percha.

May 12th.—Opened up filling to see the state of pulp. Found it in a very healthy condition, and closed the hole again.

I remained at the hospital till the end of June, and the patient did not return in the meanwhile. In November I was in London on a visit, and up till that time the porter had not again seen the patient, whom he remembered quite well. From this I may fairly conclude that the case has been thoroughly successful.

It will be observed that every time I did anything to this pulp I previously adjusted the dam to ensure perfect dryness. This I maintain is the *sine quâ non* for success in the treatment of exposed pulps.

The other case I bring forward is a striking contrast in many ways to the above. It demonstrates the inefficacy of the use of the napkin in such cases, and it also shows the beneficial results from the absolutely dry method of treatment, as also the great benefit I have derived from reading Mr. Ditcham's article already referred to.

CASE 2. July 21st, 1882.—Miss B—, æt. about twenty-three. Left lower second molar with large cavity. No pain. Excavated tooth, keeping it dry with a napkin. Found a large pulp exposure. Capped with cork and filled with Sullivan's cement, feeling assured, as the pulp was so healthy, that all was safe.

24th.—Pain in tooth since operation. Applied a blister on gum over fangs.

28th.—Still very painful. Drilled a hole through the stopping down to the pulp, and inserted a dressing of creasote and tannin. Painted gum with Fleming's aconite and iodine.

August 2nd.—Cut out stopping, as the tooth was still very painful, and treated on the principles advocated in this paper, using a drainage tube.

8th.—Patient had had a little pain the day after the last operation, but none since. Plugged up tube with a light mastic dressing to keep out food and moisture.

11th.—Saw patient. Merely changed the dressing for cleanliness sake. There had been no pain.

21st.—All has gone on well since last operation, so I filled up the tube with amalgam. The patient was very appreciative throughout, and took quite an interest in the success of the treatment.

Let me conclude by hoping that, if this paper does nothing else, it may help to stay the hand of some of my brethren from that wholesale destruction of pulps which, we all know, is so prevalent at the present day.—*Dental Record*.

PYORRHŒA ALVEOLARIS.*

By PROF. A. O. RAWLS, D.D.S.

THE conflicting opinions relative to the causes, characteristics, and treatment of this peculiar disease are quite sufficient

* Report on Pathology to the Kentucky State Dental Society.

to convince us of the fallability of man's judgment. They teach us that truths, whether great or small, are often hidden in the rubbish of old fogysm, or hampered by the enthusiastic misconceptions of men ; therefore, in presenting a report upon this subject, I cannot but recognise the probability of error in some of my statements.

When some fifteen years ago my attention was first directed to this disease as being of a peculiar nature, I at once associated it with purely local causes, looking upon it as an inflammatory condition resulting from the deposition of salivary calculus ; but after considerable treatment, based on this conviction, had yielded no very marked curative results, I naturally began an investigation in search of other causes, and to-day I present you a report of the investigation in as condensed form as possible.

Etiology.

The etiology of this disease is a study in itself. It is based, primarily, upon systemic conditions, and to my mind is one of the strongest proofs that certain medicinal agents, as well as custom, habit, environment, and diet, change or modify previously existing types of anatomical elements. It is a recognised fact that remedial *agents*, as well as other above-mentioned influences, impress the system intensely or lightly according to the degrees of material susceptibility, accordingly as vital resistance is weak or strong, that is, proportionally as chemical affinities are sharp, complete, and abundant, or passive, incomplete, and few in numbers.

Accepting, then, the foregoing proposition, though some may doubt its correctness, we will at once proceed to notice the causes productive of this troublesome malady.

First, they may be conveniently classified as of a two-fold nature, namely, hereditary and exciting, and acquired and exciting. The hereditary and acquired conditions, though proceeding from the same primary source and alike in their tendencies, may differ in degree, but both are, nevertheless, predispositions. The exciting causes are various, though generally consisting of deposits of lime salts and particles of food about the margin of the gums.

Heredity.

As first stated, the causes of heredity, and those acquired, are primarily from the same source, so that what I may aver of the former is, to more or less extent, true of the latter. The predisposing and active causes, transmitted from one generation to another, according to the physical and chemical laws involved in the reproduction of elementary types, are few, and consist principally of systemic conditions known as scorbutic, purpural, and mercurial.

Among the acquired causes may be mentioned all of the above, but the principal and most active cause, especially in the south and west of our country, is mercury. This has been my belief for a number of years, but was only expressed to the general profession for the first time at the meeting of the American Association at Chicago in ——. At that meeting I also stated that a salt-meat diet, unmixed with vegetables or acids, would cause the same, or at least such local manifestations as are present in all cases of pyorrhœa alveolaris. This opinion I still maintain, especially since I have observed that few, if any, persons once afflicted with scurvy ever escape these oral lesions. Holding this view of the primary cause of this disease, and noticing the similarity of symptoms concomitant with both systemic conditions, viz. the mercurial and scorbutic, I was led to investigate and search for some element or compound common to both causes of the foregoing dispositions to whose actions we might, with some certainty, ascribe the oral lesions so peculiar to both maladies. Thus far I have but imperfectly concluded my labours, yet I think my observations have resulted in establishing facts sufficient to justify my statements at Chicago, and to warrant further investigation based upon theories there promulgated by Dr. Rehwinkel and myself.

One of the diseases with which we associate *Pyorrhœa alveolaris*, viz. that of scurvy, remains yet somewhat mysterious in its causes; at least, there seems to exist a wide divergence of opinion among pathologists regarding its etiology.

It was a common opinion of general practitioners for many

years that a diet of salt meat, or any exclusive salt diet, would induce scurvy ; and while this is true to some extent, it is also true that scurvy can result, and has resulted, from an exclusive fresh meat diet.

No matter from what source the disease arises, we know that there co-exists an impoverished condition of the blood. Dr. Wm. Headland, in speaking of the condition of the blood in this disorder, says it is deficient in albumen, fibrin, and blood corpuscles, but has a surplus of alkaline salts.

Dr. Ward denies the deficiency of fibrin and regards the diminution of blood corpuscles as the essence of the disease. Dr. Headland believes that the increase of alkaline salts, no matter by what means the increase is produced, is to be regarded as the only recognisable *materia morbosæ*. Dr. A. B. Garrod held to the opinion that scurvy is attributable to a deficiency in the system of the salts of potash. So we here have opinions diametrically opposed to each other.

This much, then, for the conditions of the blood in scurvy. The effects of mercury upon the blood and general system are pretty thoroughly understood, though its *modus operandi* is still somewhat of a mystery. I think it has been sufficiently proven that substances, to enter the circulation through any of the tissues, either as food or medicaments, must first be dissolved in some one of the animal fluids, or in solution, before they are introduced.

Mercury is no exception ; for its introduction to the circulation it must be finely divided, and it seems so finely divided that its presence, in a reguline state, is seldom, if ever, found in the circulation or secretions. Indeed, many of our best authorities state that its action depends upon a change of the metal into an oxide or chloride of mercury. It is patent to all that this substance, in some shape, produces a rapid and marked effect upon the quantity and physiological characteristics of the anatomical and chemical elements of the blood. According to Dr. Wright, Mr. Smith, and Dr. Headland, where the system is mercurialised the blood, by some destructive agency, is deprived of one third of its fibrin, one seventh of its albumen, one sixth or more of its globules, and at the same time is loaded with a fetid matter,

the product of decomposition. Herein, then, we have an impoverished condition of the blood to some extent, and that not inconsiderable, similar to that existing in scorbutic patients. It may, and with correctness, be said that like disturbances of the blood exist in other cachexias and dyscrasias, for example, in scrofula, syphilis, purpura, &c., but the expressions of these latter systemic impressions seem to differ widely from those of the former, as they are localised in the oral tissues. It is true that any cachexia, any dyscrasia, any impoverished condition of the blood, from any source—indeed, any weakening of the chemical affinities peculiar to the normal type of the person, will tend not only to weaken the powers of physiological assimilation, but tissues already formed, and the protoplasm for re-formation of new tissue; but there are surely some morbid agencies, or some morbid agent, peculiar and common to ptyalised and scorbutic patients, aside from those existing and producing similar systemic impressions, and not the same local expressions. It may be said of scurvy that the condition is owing to the deficiency of certain articles of diet rather than to a surplus of other and different diet; but a patient can be mercurialised, no matter of what character the diet be.

And now, gentlemen, I must beg your indulgence, as well as your pardon, in pressing upon you my peculiar views relative to what I conceive to be an active principle in the causation of pyorrhœa alveolaris from both systemic diseases just mentioned. The great majority of cases of scurvy from which pyorrhœa alveolaris arises comes from a comparatively exclusive diet of salt food, therefore salt, or some compound of one of its elements, is an active principle. Knowing that scurvy may be resultant from other exclusive diet, or from mixed diet, does not, of necessity, raise any doubt in my mind as to the probability of the formation, or rather existence, of this same elementary active agency in the same undue proportion as would occur in the foregoing instance. In ptyalism we have but one element of the mercury which caused it, which is common to salt, viz. chlorine. It may be said that ptyalism is produced with metallic mercury, or with compounds of the same not containing chlorine; but

some of our best authorities claim that mercury, upon entering the system, is changed before any, but a mechanical effect is produced, and that this change consists in its being either oxidised, or, as is more frequently the case, chloridised; and since the proto-chloride of mercury is not soluble in water, it must be soluble in some of the animal fluids, and since in the animal fluids and tissues mercury is much more frequently found in the shape of the bichloride than the protochloride, we again have the evidence of a surplus of chloride.

I admit that the foregoing statement, *i.e.* that the chloride is the combination of mercury oftenest found in the tissues of mercurialised patients, is contrary to the opinion of some of our authorities and is not supported by absolute proof; but, be that as it may, we know that the chlorides of mercury are in these cases found in proportion to the degree of the mercurial impression, all things else being equal. Now it is not contended that chlorine, *per se*, is the *materies morbi*, for it seems to me evident that the general system can and has, aided and unaided by remedial agents, rid itself of any undue proportion of this element, and after such elimination had taken place there still existed a peculiar condition of the body which rendered it susceptible to the disease in question. I am, therefore, forced to the conclusion that chlorine in some of its combinations is inductive of a radical change in the chemical affinities existing between the circulation and nutrient fluids and the tissues they nourish. So, accordingly, not only the chemical constituents, but to more or less extent the physical types of the anatomical elements, are to a degree permanently changed, and from this systemic impression we have the localised expression at points favouring the action of exciting causes.

I am aware that arguments have been adduced to support the theory that the susceptibility to this disease could arise from any constitutional condition which weakens the integrity of the tissues—thus, that it might arise from a tubercular diathesis, scrofula, syphilis, &c.; but, so far as I have been able to observe, such is not the case, unless these diseases have been supplemented by a mercurial or scorbutic impression, which is at times the case. It may also be said that

the very element to whose influence I ascribe the changes productive of the disposition to pyorrhœa alveolaris is reckoned of much value in the curative treatment of tuberculosis and scrofula.

Thus, it is said that persons working in bleaching factories, where they are continually inhaling the fumes of chlorine gas, never have consumption, and that consumptives are improved in health and cured who subject themselves to the same influences. It is equally true that cases of scrofula are benefited by a residence near, or a voyage over, salt water ; but neither scrofula nor consumption has the peculiar systemic conditions which favour pyorrhœa alveolaris. The peculiar chemical affinities and physical types of the anatomical elements of the first render probable a local expression within the lung tissue of the second, the glandular system ; but in the latter always within the tissues of the jaws, and probably other parts of the bony system. The exciting causes consist chiefly in local irritants, of salivary calculus, and articles of food, but any force exerted upon the periosteum or gum, to induce the separation of the latter from the neck of the tooth, may act to the same end. Thus, continuous pressure upon some one or more of the front teeth, resulting from peculiar antagonism of the molar or bicuspid teeth, the loss of an antagonising tooth, rubber or silk ligatures, and regulating appliances, all tend, more or less, to act as exciting causes. Notwithstanding, however, the presence generally of tangible exciting causes, if we will examine closely the very earliest signs and symptoms of some of these cases, we will be puzzled at the scarcity and minuteness of physical exciting causes, and in some instances fail to find even a trace of anything foreign to the parts from external sources save the saliva and such articles of pultaceous food it might carry between the already loosened gums and corresponding teeth. Neither in these, or for that matter, the majority of cases, do we find salivary nor so-called sanguinary calculus adhering to the roots, and operating as a prime mover of this peculiar morbidity. They may, indeed, be sources of intensifying expression, and continuing the action of this local expression of systemic condition, but never the prime cause.—*Ohio State Journal*.

PHOSPHORIC ACIDS, ZINC PHOSPHATES, AND THE
NEW METAL ACTINIUM.

By DR. NILES, of Boston.

I WAS led into the study of the cements for dental purposes because of the very uncertain and unsatisfactory results attending their use. One package gave confidence only to be dispersed by the second, and a fresh compound that worked with certainty at first would be found full of uncertainty at the end of a few days or weeks. After considerable work, I succeeded in analysing a large number of the best compounds in the market. The active principle I found to be the well-known chloride of zinc and the oxide of the same metal, or magnesium oxide. Phosphates are simply pyrophosphoric acid and zinc oxide. The inert substances in these preparations (excepting actinium) intentionally introduced, or impurities, comprising one fourth to one third their bulk, are as follows:—Phosphate of soda, oxides of alumina, cadmium, manganese, antimony, iron, arsenic, and silica. Some of these may have been intentional ingredients, but they were most likely accidental impurities, in the substances used; however, nearly all of them are of no use, as they do not render the cements hard or insoluble.

My trouble with cements proved to arise from impurities, and defective preparation and bottling for use. Those who have furnished our preparations tell us, and truly, that no two lots of phosphoric acid or oxide of zinc in the shops are alike, and thus we are unable to get two lots of filling-material that act alike, or, if satisfactory at first, it deteriorates before or after it comes into our hands.

All the acids manufactured from phosphorus are powerful absorbents of moisture, as well as the chloride of zinc; the same is also true to a great extent in regard to the oxide after being calcined at a very high heat, and this is doubtless the solution of the trouble experienced with cements deteriorating. Moisture is absorbed from the air through the corks, or as the bottles are opened in the use of their contents.

After some study of the subject, I sum up the matter as follows:—There are four acids derived from phosphorus, and although they differ only in their basisity by from one to three molecules of water, they form, when combined with bases, entirely different salts.

Until a comparatively recent time, all these acids were derived from the product of burning phosphorus in air; this produces a white powder, the oxide, or the first acid (anhydrous phosphoric acid) the formula of which is P_2O_5 . By adding water it becomes hydrated, and forms the metaphosphoric acid (H_2O, P_2O_5); this is recognised by its giving a gelatinous precipitate with nitrate of silver. By adding more water and boiling, another molecule of water is taken up, and the third acid is produced, or pyrophosphoric acid ($2H_2O, P_2O_5$), which is recognised by giving a white precipitate with nitrate of silver only after ammonia is added. Add still more water and boil for a very long time, and the fourth or last acid is formed, the orthophosphoric acid ($3H_2O, P_2O_5$); this gives a yellow precipitate on applying the same test as the last.

Until of late years the orthophosphoric acid has been derived wholly by boiling the anhydrous with water. Prof. Markoe, of Boston Highlands, was the first to manufacture it by the action of nitric acid, bromine and iodine upon phosphorus. We have then,

Anhydrous phosphoric acid, P_2O_5 ,

Metaphosphoric acid, H_2O, P_2O_5 ,

Pyrophosphoric acid, $2H_2O, P_2O_5$,

Orthophosphoric acid, $3H_2O, P_2O_5$.

All of these acids, with perhaps the exception of the first, are kept and sold under the general name of phosphoric acid; usually we meet with the pyrophosphoric, commonly known as glacial acid. Since the discovery of the new process for manufacturing the tribasic it has generally taken the place of the glacial for medical purposes on account of its purity; most of the glacial acid is a German preparation, and contains from 20 to 30 per cent. of phosphate of soda. It is well known that this is the acid universally in use for the manufacture of our phosphate of zinc filling-materials.

The liquid, then, that comes to us in these compounds is nearly one half phosphate of soda, which is inert and perfectly soluble in water, and must, therefore, greatly impair the durability of this class of filling-materials. The fact that phosphate of soda is inert doubtless assists in regulating the time of setting, and, like any other phosphate, would be useful only in toning down the acid by its affinity being partially satisfied by it. In view of these impurities, and the fact that the affinity of an acid for a base or salt may be indicated by its basisity, it occurred to me that the four acids in a pure state could be proportionately mixed and boiled to a certain specific gravity, to unite with a powder and form a more insoluble compound.

After considerable trouble in getting my acids pure, I was able to see my theory demonstrated; in fact, my liquid, of a brownish-grey colour, worked well with oxide of zinc, producing the most insoluble compound I had seen. (My tests are the usual tests for density and solubility in vegetable acids, like acetic; for alkaline tests dilute caustic potassa or soda is used.)

Most of our commercial zinc comes from France, England, and New Jersey. None of the zinc from these sources is pure, either in the metal state or in the oxide. It is evident that to perform experiments intelligently one must know the substances that are being used, to start with. Some of the impurities in zinc are, however, beneficial, as silica, actinium, and tin; but, not having mixed them, we cannot well discover in what proportions they are present. First, the oxides or salts must be precipitated by the proper reagents, then mixed in the right proportions and fused to a solid mass in a reverberatory furnace; this should be done to a certain degree of heat to produce the desired suboxide. The product obtained may then be ground, and the compound coloured with triphosphate of silver as desired, using the same salt of alumina to give the required cohesive properties.

Actinium oxide and sulphide, all through my experiments, have been sources of annoyance and confusion.

Its discovery, last September, by Dr. Fipson, F.R.C.S.,

of London, threw much light upon my work. The sulphide, a canary yellow, very closely resembles the same salt of manganese.

Zinc ores contain 4 or 5 per cent. of actinium. Its suboxides unite with the suboxides of zinc when fused, forming a mass very much resembling silica; a powder from this, combined with the stronger acids, forming a valuable filling-material.

At present the only source of actinium is from zinc, and none of the pure metal has been isolated; so that the difficulty of preparing cement from this substance is apparent. A very good substitute is made with silicate of zinc, or alumina, or oxide of tin treated in the same way.

This forms a powder which combines with the acid and sets quite quickly, forming a compound insoluble in the fluids of the mouth when normal, and sparingly soluble in strong acetic acid.

We are all aware that it is a desirable quality in a cement that it should set quickly, allowing simply time enough to introduce it thoroughly into the cavity. This is regulated as desired, either by the proportions of the acids or by reducing the powder in calcining.

It is evident, from the rise in temperature and the disappearance of the acid when mixed with the powder, that a chemical action takes place and a phosphate of the powder is formed; it is a fact, also, that a given amount of acid can only unite with a quantity of powder sufficient to satisfy its affinity, and if there is an excess of powder the compound formed is brittle and crumbly, admitting moisture; on the other hand, too much acid makes a dangerous substance, soluble in water and destructive to the tooth.

Phosphates, then, should be mixed to a putty-like mass, and when set should form a neutral material; this may be determined by powdering a lump of the filling, beating it up with distilled water, and testing with litmus.

Phosphoric acids are all powerful absorbents of moisture, as has been said, so much so that it is impossible to preserve them in glass, rubber, or cork-stoppered bottles; so the liquid put up in this way is constantly deteriorating. This

is the universal testimony of those who have used these filling-materials. It is also true that the powder, if exposed, may bring about the same result when mixed with the acid. It absorbs moisture, like plaster of Paris, from the air, and becomes unfit for use.

To overcome these objections, I conceived the idea of enclosing sufficient of the powder and acid for use at one time in separate sealed glass tubes or capsules. This serves to keep all except what is wanted for immediate use stopped and away from air; also, it is convenient to use, cannot be upset or wasted when used, and enough is enclosed in each capsule for the largest cavity, and may be mixed to the required consistence.

Thus I believe we can have a reliable phosphate filling-material that will not deteriorate, and if introduced, free from moisture, with good judgment in deciding when and in what teeth, and where they should be filled with it, it will prove a valuable material for dental use.—*Dental Cosmos*.

SULPHURIC ACID IN AMALGAMS.

IF filings of metals remain exposed to the air for any length of time an amalgamisation takes place much slower. As mercury is an easily-oxydised element, it is necessary to keep it from contact with the air as much as possible if it is desirable that after hardening a uniform texture should be obtained, and that the density of the filling should correspond with the metal filings. If a drop or less of sulphuric acid be added while rubbing the mercury and filings together union is accomplished easier, as the oxide unites with the acid; and if the amalgam is afterwards washed in water, every part of the acid is removed, and a good filling material obtained.—*Zahntechnische Reform*.

Reflections from the Surgery.

CASES

Reported by F. HENRI WEISS, L.D.S. Eng.,
DENTAL SURGEON TO THE NATIONAL DENTAL HOSPITAL.

Ulcerative Stomatitis.

E. W—, aged 5, was brought by her mother to obtain treatment for extensive ulceration of the gums. The history given was that the child about five weeks previously had suffered considerable pain about the region of the lower teeth of the left side, which the mother attributed to the eruption of the permanent set, as some of the teeth were loose; and the gums appearing congested, a powder, and some borax and honey, were prescribed by a neighbouring chemist, which afforded a certain amount of relief until within a week or ten days before she consulted me. It was then found that although there was only tenderness when eating, the gums were inflamed around the lateral, canine, and first temporary molar, which gradually became worse up to the time I saw the case.

There was no difficulty in diagnosing the case as ulcerative stomatitis, which had extended from the lateral to very nearly the end of the second temporary molar. There was a considerable loss of gum tissue, the edge of which was covered with a thick slough, which, when removed, caused hæmorrhage. The canine and first molar were quite loose, and it was in this region that the lips had become affected.

I syringed the part with very dilute Condyl's fluid and warm water, ordered a piece of lint to be kept between the gums and lips moistened with dilute Condyl's fluid, and prescribed a powder of Potass Chlor. gr. v, Sacchari Albi gr. iij, to be taken three times daily for two days, and requested the patient to call again on the third day.

On this visit I found a decided improvement, and as the

canine and first molar were hopelessly loose and black, I removed them, and reduced the chlorate of potash to three grains twice daily, as five grains was rather too large a dose for a child of five years of age to continue with.

At the expiration of four days a further improvement took place, with the exception of one part, which threatened to expose the crypt of the permanent canine. Having perfect faith in the chlorate of potash, I did not alter the treatment, but waited for a further change. I thought that the removal of the teeth may have aggravated the case in this part, but their extreme looseness may have been due to the rapidity with which the disease was progressing.

A gradual improvement now took place, but three weeks elapsed before a perfect cure was effected. I am of the opinion that a stricter attention to the diet and further constitutional treatment would have materially assisted to bring about a speedy cure, but in these days, when the constitutional treatment, under the protection of the Dental license, is considered empirical, I confined myself to the specific and relied upon that doing nearly all that was needed in so young a patient.

Laryngismus Stridulus.

A case of this distressing nervous disease came under my notice in such a way that I was not only able to study all the symptoms, but was unhappily filled with anxiety, for it occurred in my own infant daughter.

When nearly four months old it was noticed that when the child cried it held its breath longer than was considered usual, but as it did not occur many times during the week little notice was taken of it. As time went on there appeared an inclination for it to get asphyxiated, and after a little struggling for a few seconds it would cry and then appear quite well. This would take place about once daily, and we could not but help feeling anxious as to the cause, as it was rather too early for us to expect the eruption of the temporary teeth. A consultation with *materfamilia* ended in the assurance that it was nothing serious, which we accepted with satisfaction, so nothing was done. Instead of

the attacks diminishing in frequency they increased, until they numbered between forty and fifty in the twenty-four hours.

It may be interesting to those who have not witnessed an attack to have a description given of one. They were all more or less alike, the only difference being their duration, which was never longer than thirty seconds, the usual time being about fifteen seconds. The child might be sitting up playing with some trifle, when it would cease to breathe and jerk its limbs about, the face becoming dark and the mouth open, tears in the eyes, the thumbs drawn towards the palms of the hands, and the toes turned backwards. This would continue, when a deep gasp would be heard, and the child would cry for a few moments, and then go on as though nothing had happened. During the attacks everything was done to excite respiration, such as dancing it about and sprinkling cold water in the face.

These severe attacks continued for about a week, when one evening one resolved itself into a fit of convulsions, which lasted nearly half an hour. I summoned the nearest medical man, and he prescribed—

R. Pulv. Hydrarg. c. Creta gr. ij,
Pulv. Jalap. Comp. gr. iij,
Ft. Pulvis.
Statim sumend,

and the diet limited to cow's milk and water, the child having previously been fed upon a well-known infant's food.

The following day the attacks of stridulus continued, and on the third day there was another fit, but of much less severity, lasting only ten minutes, and with this ended all the trouble, for I cannot remember a single attack of the choking following the second fit. Our nurse informed us that the first lower incisor was cut either the same evening or the next day as it was noticed in the early morning. This, I think, clearly proves that the disease was almost entirely due to the eruption of the first tooth, and we looked forward to a return of the symptoms with the following teeth, but they did not arise. A rather severe attack of diarrhœa accompanied the eruption of the canines of the upper jaw.

and now the child is all one could wish in health, and is three and a half years of age.

CURIOUS INSTANCE OF IDIOSYNCRASY.

By W. H. KIRTON, L.D.S., R.C.S.I.,

HONORARY DENTAL SURGEON, ROYAL PORTSMOUTH, PORTSEA, AND GOSPORT HOSPITAL, ETC.

THOUGH nitrous oxide may lay claim to be among the best known of anæsthetics, our information concerning its physiological action is scanty compared to that which we have gained of chloroform or ether. Every observant man who has been in the habit of administering it, must have observed cases in which the common phenomena of livid features, stertorous breathing, and slightly dilated pupils, have been supplemented by other and more instructive symptoms. Among these are tetanic spasms indicating an increase of the reflex excitability of the spinal cord, but it is seldom they are such prominent features as in the case which I am about to describe.

The patient, an officer in the royal navy, was a man about thirty-four, whose system had been considerably unstrung by a recent attack of dysentery. He called upon me for the removal of the fangs of the first superior molar on the right side. Having ascertained that there was nothing to contra-indicate the use of anæsthetics, I administered six gallons of the gas without, however, producing anything beyond a slight stupefaction, which was not sufficient to prevent him from sitting up, removing the gag from his mouth, and conversing intelligently. The face-piece was carefully examined, but no leakage could be detected. Seven gallons were then inhaled but without effect, the patient removing the gag once more and seeming as clear as ever.

By this time I began to fear that he represented one of those rare cases of idiosyncrasy which are entirely unaffected by anæsthetics. I determined, however, to give him one

more trial, and to my surprise was completely successful. He had consumed little more than four gallons before his face became livid, his conjunctivæ insensible, and his breathing stertorous. I lost no time in removing the troublesome fangs. His spinal cord gave evidence of being in a peculiar condition of excitability, which manifested itself by severe tetanic spasms, almost resembling those produced by strychnia. Although his feet were raised from the ground the contraction of his quadratus lumborum and other great muscles of the loins were sufficiently powerful to bend his body backwards, and produce the condition known as opisthotonos. These convulsions proved fortunately to be of short duration, and I was enabled, by bringing forward his head, exposing him to a free current of air, and applying cold water to his neck and ammonia to his nostrils, to bring him round in safety. His return to consciousness was heralded by a boisterous fit of laughter which lasted for several minutes. He informed me that he experienced no unpleasant sensations while under the influence of the gas, and mentioned the interesting fact that a surgeon had failed to put him under chloroform while operating on the corresponding tooth of the other side.

There are two points in the case of which I have given this brief summary, which are, I think, worthy of attention. The one is that a small quantity of gas proved successful where a large one failed, a fact which seems to indicate a cumulative action upon the part of the anæsthetic. The other, the curious toxic effect exercised upon the spinal cord and excito-motor nerves. I trust that these points of interest may prove sufficient excuse for this encroachment upon your valuable space.

LONDON DENTAL HOSPITAL.—An amateur performance will take place on the evening of December 19th, at St. George's Hall, the proceeds of which will be devoted to the above charity. It is earnestly hoped that all who take an interest in Dental education will purchase tickets, which may be obtained from W. F. Willis, Esq., 17, Great Marlborough Street, W., or any Member of the Staff.

British Journal of Dental Science.

LONDON, NOVEMBER 15, 1882.

AT a recent meeting of the Odontological Society of Great Britain Mr. Thomas Gaddes read a short paper, in which he invited the members to decide what were the limits of Dental Surgery. It was thought that there could not be a strict line drawn between the Dentist and surgeon or physician, as local disturbances frequently called for constitutional remedies, and although they might originally exist in a remote part, morbid changes would sometimes take place and we should find the disease had extended over a large area. The opinion of most present was that the Dentist could always obtain the willing co-operation of the surgeon, and when there was anything beyond the usual Dental work the case should be transferred to the surgeon, or his services obtained to combine with the Dentist.

As there will be a paper read on the same subject before these pages are issued, we are not in a position to speak of what may be argued, and not having seen the manuscript, are not aware what conclusions may be arrived at. This we feel, the Dental Surgeon has very great responsibilities, and it is to these that we would draw our reader's attention.

In 80 per cent. of the cases treated by the Dentist, pain of some sort is inflicted, and we may ask ourselves what influences may result from such excitement? Again, can we positively state that our patient is not likely to be seriously indisposed in some form or other after he has left our surgery? and, lastly, what amount of knowledge should a Dentist possess in addition to his technical skill to entitle him to the full confidence of his patient?

The first of our remarks deals with cerebral disturbances, and these may be summarised into hysteria, syncope, epi-

lepsy, and apoplexy. How strangely these may be mistaken by the uninitiated, yet what dangers we are likely to run if we apply inappropriate treatment. It is well known to many that all these seizures have occurred in the Dental surgery as a result of nervous excitement, and we say every Dentist should know the distinct symptoms of each and apply primary remedies until the physician could be summoned. The common outcry is that these dangers present themselves only when nitrous-oxide gas is being administered, but to this many will affirm that is not so. Added to a predisposition to these seizures we have in nitrous-oxide gas a cerebral excitant which manifests itself more or less upon the partial recovery of the patient, so that unless either nature or artificial means are adopted to arrest the development of an attack one is sure to follow, and we thrust the entire blame upon the gas.

Turning to the second, we have hæmorrhage and erysipelas. The former would in all probability call for immediate attention, either from the Dentist or the surgeon, but the latter may develop itself under the eyes of the Dentist and lead to fatal consequences. A case of this sort is not improbable. A patient calls with swollen face and the offending tooth is removed, instructions are given to apply certain remedies and the patient leaves. A few days after, a friend of the patient calls to say that there has been considerable pain, and the face continues much swollen. This condition being very common after extraction with alveolar abscess little importance is attached to it, and with a confidence which the patient may possess in the opinion of the Dentist nothing is done. Twenty-four or forty-eight hours elapse, and we are told that the swelling has greatly increased and the patient has been delirious all night. Have we now a simple swollen face,—pain will possibly produce delirium,—again we assert our assurance that all is right, but how falsely! Is not the patient suffering from erysipelas, which may in a few hours reach the membranes of the brain and lead to fatal results? In this we have a condition that the Dentist should be made quite familiar with, but whether he should treat it or not is another matter. He should, however, when he

hears of much swelling after tooth extraction, discover whether it be simple œdema or erysipelas.

To close our remarks we would encourage every effort to make Dental Surgery inseparable from general surgery and medicine, for the conditions which arise prove this only too clearly. In the actual operations all will depend whether the operator possesses the knowledge sufficient to meet with success. If he fails he is liable to an action for damages, or he is indicted for manslaughter, as the Dental license does not offer the necessary protection. Dental Surgery has a very wide field, but it is the man who will be called upon to prove its existence. Legislature may say you may or may not do this or that, but it will be the individual who will, by his skill, undertake to define its limits.

Manipulative Miscellany.

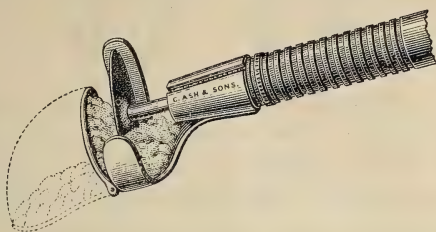
All instruments or articles wished to be described under this heading are requested to be sent *for inspection* to the publishers not later than the 8th and 23rd of each month, they can be returned in a few days. Where, from the size or otherwise, this is impracticable, a clear and minute description will be sufficient; the sole object being to give practitioners a description of everything new, on its own merits, and without any intention or wish to pit one against another. All makers, vendors, and inventors, are invited, with strict impartiality, to contribute towards this end.

NEW DISC GUARD AND MOISTENER.

THIS little contrivance, which is easily attached to any straight hand-piece of the Dental engine, very effectually keeps the dividing and finishing discs moistened, and at the same time protects the lips and tongue from injury.

It consists of a hollow cone, which can be slipped on to the hand-piece, and from the back of which a plate, curved backwards, springs, which after being continued for about half an inch gives origin to two lateral arms which are curved

forwards so as to embrace half the disc. From the centre an additional arm is added, supplied with a hinge, which enables the operator to press a piece of sponge close to the disc. The sponges are held by means of clamps, one of which is attached to the hinged arm, and the other to a part



just below the extreme end of the hollow cone. The accompanying illustration clearly shows the several parts described.

Dr. C. H. Stokes claims this apparatus as his invention, and it is supplied to the profession by Messrs. Ash and Sons of Broad Street.

FOIL SHEARS AND FOLDER COMBINED.

ALL will admit that if gold foil is folded with a moist hand much of its cohesive power is lost, and an inferior plug will be the result. Many pieces of apparatus have been invented by which the foils may be made ready for the cavity without being touched by the hand, and Dr. J. B. Morrison has added another to the already long and useful list.

The shears he has invented has one blade like the ordinary pointed scissors, and the other like a paper-knife, and by means of this combination the foil may be cut and folded without the least fear of injury. They are eight inches long, including the handles, are made of the best steel by Mr. H. D. Justi, of Philadelphia, and are either crocus-polished or nickel-plated according to price.

We take them to be a great improvement upon the ordinary foil scissors. Mr. J. Ritchie, of Great Marlborough Street, has brought them under our notice.

NEW CLAMPS FOR BACK MOLARS.

THESE clamps have the advantage of having the arch so low that they may be adjusted to back teeth where there is



a difficulty in opening the mouth, and being very thin possess great elasticity. The holes in them, as seen in the illustration, enable the operator to place them directly on to the tooth with the pointed ends of the clamp forceps.

Messrs. Ash and Sons are manufacturing them from Dr. C. H. Stokes's pattern.

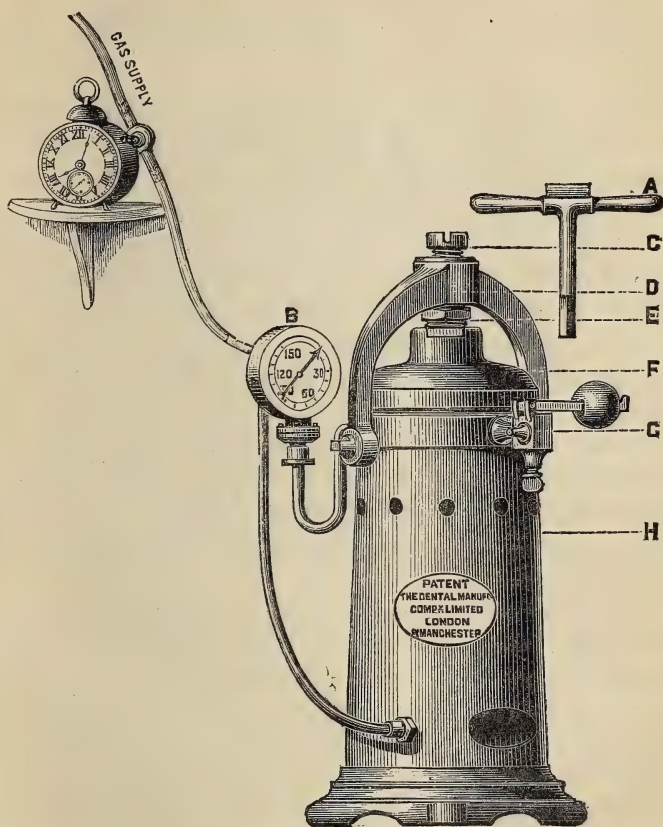
CLOCK TO REGULATE THE TIME FOR VULCANISING.

THERE are many of us who owe our heads to the fusible plugs which are introduced into the lids of the vulcanisers, so that any invention that will remind the occupant of the workroom that the vulcaniser or celluloid oven is at work must be acceptable.

The Dental Manufacturing Company have brought under our notice a clock which can be fixed to the gas apparatus of any vulcaniser, and that at a given time the gas will be turned out and an alarm sounded.

It consists of a metal drum nickel-plated clock, four inches in diameter, with the addition of a piece of apparatus, which we must describe in detail. Attached to the posterior margin, about two inches from the top, is an arm into which is screwed a strong metal drum, and which has a pipe carried forward one inch. In the centre of this pipe a spring piston works which, when allowed to contract, cuts off the gas passing through the drum. Just to the side of the piston is a trigger, which is worked by the clock, so that if the piston be withdrawn the trigger will catch it, only to be relieved when the clockwork moves it back. The gas enters by a pipe at one side of the drum, and leaves by another at the

other. We might suggest that a distinction be made between the pipe that leads to the stove and that to the main, as the valve does not work both ways, and an incomplete cutting off of the gas is the result. Turning to the clock, we find that there are four keys, the first to set the hands, the second to wind the spring, the third to wind the alarum, and



the fourth to set the hour at which the alarum and trigger are set free. The alarum is produced from a metal bell situate above the clock, and to set it for use it is necessary to put the hand on the small dial to the hour it is to go off, then withdraw the piston and fix it on the trigger, and finally wind up the spring for the alarum.

Literary Notices and Selections.

REFLEX LESIONS OF THE ORAL CAVITY ASSOCIATED WITH PREGNANCY.

By JOSEPH RICHARDSON, M.D., D.D.S.

AT a late meeting of the Indiana State Dental Association, it was my privilege to read before that body a paper entitled "Correlated Diseases of the Teeth and Ear." The purpose of the paper was to present some ascertained facts in regard to the reflex nervous relationship existing between the teeth and the various structures of the auditory apparatus, and to account for the manner in which not only functional but nutritive or trophic diseases of the latter occurred as a sequence of irritation having its source primarily in the teeth or gums.

Researches directed to the ascertainment of sympathetic relationships of other organs, as the eye, brain, stomach, uterus, &c., would probably reveal them also as so many areas correlated in like manner as the ear to primary disorders of the organs of the mouth.

It is not my purpose, however, to consider further, in this place, reflex diseases of organs or regions more or less remote from the mouth, but to reverse the order of inquiry, and trace if possible the sympathetic dependency of certain disorders of the teeth upon functional disturbances or structural lesions primarily located in some remote part of the general organism; premising, that a better understanding of the laws of reflex action, a more familiar and exact acquaintance with nerve function, and a clearer insight into the correlated areas existing between widely separated regions, would lead to more rational and trustworthy views of the etiology of many sympathetic disorders of the buccal cavity, the origin and nature of which are, as yet, measurably a sealed book to us.

In the discussion of my subject I shall, in order to confine myself within reasonable limits, consider only certain abnormal or pathological states of the oral cavity frequently associated with pregnancy.

It might be thought that, as utero-gestation is essentially a physiological act, it would hardly be competent to give rise to such irritation as would establish sympathetic disorders of the teeth, and this would doubtless be true if the uterine functions during this period were always normally performed. But the simple fact that the reproductive act is, ordinarily, a *conscious* one, leads obviously to the conclusion of functional derangement, for the senses take no cognisance of the normal processes of organic life, and hence no one, in perfect health, through the medium of common sensation, is supposed to have any mental perception of a brain, stomach, liver, or uterus, or of their functional processes. The very uniformity of the oral affections coincident with pregnancy is, in itself, presumptive evidence of perturbed uterine function more or less severe and persistent.

Before proceeding to point out the nervous relationship between the uterus and the oral cavity, it would seem pertinent to examine briefly the generally accepted theory in explanation of certain abnormal states of the organs of the mouth associated with gestation.

The prevailing view, I believe, is that the tendency to more rapid decay of the teeth characterising this period is due to the increased consumption of lime salts incident to foetal growth and development, and that this superadded draft upon the calcific elements of the maternal circulation, by diverting the lime salts ordinarily appropriated by the teeth in the processes of repair, induces a nutritive lesion characterised by deficiency of ossific deposits, and consequent structural impairment—a condition rightly supposed to favour accelerated decay.

This theory would seem to be predicated on the assumption that the bone-producing elements of the ingesta are, in the unimpregnated state, largely if not wholly appropriated by the tissues into which they enter as a component—that there is not, ordinarily, any adequate excess to meet the exigency

under consideration, and that when such exigency occurs, it becomes, as between the necessities of mother and child, a simple question of *divide*.

Now, aside from comparatively infrequent cases of tissue starvation consequent on pronounced deficiency of the bone-producing elements in the food, it would seem reasonable to suppose that there is, ordinarily, a prevailing excess of calcific matter in the maternal circulation adequate for all the contingent needs of both mother and offspring. If this were not so—if, in the unimpregnated state, there were but a simple sufficiency without excess, the fœtus would suffer in common with the mother, and we should expect, whenever the demand for increased supply occurred, to find, not only structural impairment of the mother's teeth during the gestative period, but, as the result of imperfect ossific deposits during the period of fœtal evolution, osteological malformations a common characteristic and a common inheritance of the human race—conditions, the existence of which has no warrant in facts or observation.

If this theory of diversion, or robbing Peter to pay Paul, is, as I believe it to be, neither rational nor in accordance with any just interpretation of the laws of nutrition, neither is it acceptable in explanation of other phenomenon associated with utero-gestation. It does not account for the distressing and oftentimes violent pains associated with teeth but slightly decayed, and often with those of unbroken structure, nor does it in any manner explain the presence of the various neuralgic affections of neighbouring parts coincident with impregnation.

We must look further, then, for some more rational solution of the problem of causation as it relates to the sympathetic oral phenomena associated with the reproductive processes.

A more plausible and defensible theory, I believe, would assign to these phenomena the character of reflex lesions, functional or structural. To justify this conclusion, I shall first endeavour to ascertain if the organs of the mouth constitute an area correlated to the uterus through the medium of the sympathetic system of nerves, and then consider in what manner the vaso-motor fibres of that system operate as

factors in the production of the oral phenomena which I have characterised as reflex lesions.

It is important to remember in this connection the essential fact now broadly recognised by modern physiologists, namely, that the vaso-motor fibres of the great sympathetic system of nerves are largely distributed to the blood-vessels, and that their peculiar and distinctive office is to control and regulate the calibre of the vessels to which they are distributed, and consequently the blood-supply to any given part.

Bearing this central fact in mind, the next inquiry is, do the teeth constitute an area correlated to the uterus through the medium of the sympathetic system? The relationship is, I think, sufficiently obvious, and may be traced as follows: The blood-supply to the teeth is derived from the external carotid through its branches, the inferior dental, and alveolar branch of the internal maxillary arteries. The vaso-motor nerves controlling the calibre or tonicity of these vessels are derived immediately from the external carotid plexus of the sympathetic—a plexus derived from the superior cervical ganglion of the spinal sympathetic.

The uterus and its appendages and vaginal walls are supplied with nerves from the pelvic plexus of the sympathetic, bringing these several parts into immediate relation with the spinal sympathetic system.

Thus it will be seen that any tissue impression having its source in the uterus or associated structures would be transmitted by way of the afferent vaso-motor fibres to the vaso-motor centre in the medulla, and, returning by the efferent fibres in reflex relationship with the former, would reach the carotid plexus through the superior cervical ganglion. As the branches of the external carotid artery, to which this plexus is distributed, supply the teeth with blood-vessels, it is not difficult to see how the teeth of the superior and inferior maxilla become an area correlated to the uterus through the medium of the carotid plexus of the sympathetic system.

The correctness of this view of the relationship of the regions under consideration being granted, it only remains to ascertain how, through the action of the vaso-motor nerves, nutritive

lesions or reflex functional disturbance in connection with the teeth may occur as a sequence of irritation having its origin in the uterus, its appendages, or vaginal walls.

Dr. Charles H. Burnett, commenting on reflex diseases of the ear, says: "It may be stated in a general way that *the effect of any irritation in a vaso-motor nerve-tract may be to excite vessel-dilatation through diminished inhibitory nerve-power, in a correlated area,*" while Dr. Woakes, of London, affirms the fact of dilatation of the vessels as a constant condition following reflex irritations.

Accepting this statement as an ascertained physiological fact, we should have, as the result of any irritation having its source in the gravid uterus or its associated parts, impaired tonicity of the pulp-vessels, manifesting itself in dilatation and consequent congestion or hyperæmia. If the disturbance in the pelvic region were such only as to produce but slight irritation, the reflex lesion of the pulp would manifest itself as a so-called sympathetic neuralgia consequent on pressure of nerve fibres by the engorged and distended blood-vessels. Sympathetic toothache, manifesting itself in teeth of sound as well as unsound structure, is very commonly associated with pregnancy, and cannot be rationally accounted for, I apprehend, except in the manner here indicated. Ordinarily, the exciting cause would be insufficient to induce more than functional disturbance in the pulp, but it is easy to conceive how such reflex irritations of sufficient intensity and persistence might provoke blood-stasis, inflammation, and disorganisation or death of the pulp.

Let us next apply the conclusions of this paper in explanation of the phenomena of softening and more rapid decay of the teeth during the period of gestation. The lesion is, I think, clearly a reflex one. Anything like prolonged hyperæmia of the vessels of the pulp, must, by altering or diminishing the blood-supply, seriously interfere with the nutritive processes concerned in the reparation of wasting tissues. The consequence of such interference with the normal functions of the pulp, in so far as its vessels are concerned in the nutrition of the tooth, would be in the direction of degeneracy or retrograde metamorphosis of tooth

structure. This would imply, we may suppose, defective assimilation of ossific pabulum for purposes of repair, and certainly diminished vital resistance to the action of age as operative in producing solution of the lime salts. We should have, consequently, from the operation of these causes, a tendency to general softening, with hypersensitiveness, and and a greatly increased rapidity of decay. These are frequent coincident complications of pregnancy, are always more or less distressing, and often involve the loss of valuable organs. The subject is, therefore, one of great interest to us as oral specialists.

Whether the views here advanced as to the cause and nature of these lesions are correct or not, they are submitted to the candid and impartial criticism of the profession.—*Ohio State Journal.*

THE THERAPEUTIC USE OF IODOFORM IN DENTISTRY.

By Dr. V. L. TANZER, Graz, Austria.

It was my intention to demonstrate the use and the value of iodoform in Dental practice before the Society of Surgeons of Steiermark, at their last meeting; but the time being limited and no parties being present upon whom to demonstrate, the matter was deferred. I therefore desire now to give a few facts in regard to the above-named substance, and my experience therewith.

Aroused by the article of Prof. Moleschott, of Turin, on iodoform ('Wien. Med. Wochenschr.,' Nos. 24, 25, 26, 1878, especially the sentence in No. 26, page 708), "A brother of chloroform, the iodoform is a splendid pain obtunding substance, &c.," I immediately procured from Hanzlik, the apothecary of the court at Graz, 30 grains of iodoform for experimentation.

In many cases of caries, where formerly the tincture of iodine was used, iodoform was substituted with much better

success, and the effect gained was more lasting, as the iodoform could be applied on cotton and remain several days. I have also used it in cases where the pulp was very sensitive, or where it was accompanied by endo- or periostitis, instead of the arsenical paste. I left it in for several days with good success.

The iodoform was mixed sometimes with glycerine, and again with vaseline, or in solution with collodion; but most frequently I applied it on cotton in the form of powder. I think it was more easily borne in powder; being well covered it was not disagreeable on account of its penetrating odour. This last fact was the reason why I did not employ it for destruction of the pulp, but only where the pulp was very sensitive, or where the use of iodine was inadmissible.

I was quite agreeably surprised at the article of Dr. Scheff, Jr. ('Wien. Med. Presse,' No. 28, July 10th, 1881), and being thereby encouraged, I have since used the iodoform paste prescribed by Dr. Paschkis in all cases where the use of arsenic was indicated, and I have been well pleased with the results thus far attained. The penetrating odour of the iodoform is in this paste much counteracted, but not to such an extent as could be desired.

To cite an example, I applied this paste (without the glycerine) in the mouth of a lady, during the days between the 1st and 6th of this month inclusive, in three very badly decayed molars, and she has not complained of either smell, taste, sickness of the stomach, or lack of appetite. In two of the molars sensibility was entirely destroyed in this length of time: in the third there was but partial death of the pulp; the paste being then covered in with Hill's stopping, the tooth was found to be insensible at the expiration of three additional days.

The use of this iodoform paste is as convenient to the country practitioner as the city specialist, and more so, as the patients oftentimes do not return at the proper time to have the arsenical paste removed. It can also be used in all cases of toothache caused by caries, but the paste must be hermetically sealed, as otherwise the odour and taste will be disagreeable.

Though this paste is not entirely reliable, it is so in most cases. The paste of Drs. Scheff-Paschkis is to be prepared in the following manner :

R. Iodoform—
Kaolin, aa 1'00,
Natri carb. 0'10,
Ol. ment. pip. gtt. iij.

Glycerine, sufficient quantity to make into a paste.

It can also be prepared without the last-named constituent, as it was first advised by Dr. Scheff, and as I used it in most cases, as it seemed to have less odour and lasts better. When more than one dose is prescribed, it is best to divide it into three or four vials, as the iodine is easily decomposed. I shall report further experiments in regard to this valuable remedy, and hope others will do the same.

P. S.—In later experiments with, and observations on, iodoform paste, it has been ascertained that it will not do to do away entirely with the (Haider's) arsenical paste.—*Missouri Dental Journal*.

DENTAL LEGISLATION IN FRANCE.

UNDER existing laws in France, a Dentist "is entitled to perform any and every operation on the teeth, and oral cavity, to use and prescribe all the drugs, caustics, &c., necessary for the treatment of the disease with which he deals, and furthermore, to administer anæsthetics." This, says Dr. Magitôt, is the "simple and brutal fact."

The want of some legislation regulating the practice of Dentistry in France having long been felt, a bill was prepared providing for the establishment of a diploma of Dental surgery, which it should be incumbent on all Dental practitioners to hold. This bill was referred by the Minister of Public Instruction, M. Ferry, to a commission consisting of MM. Gaverret, Duplay, and Leon Le Fort. The original bill underwent essential modifications in committee, and the

one reported by the commission proposes a new diploma, that of Dentist, and provides that the candidate must be twenty-one years of age, must have had a good preliminary education; must have studied anatomy, physiology, and pathology for two years at a medical school, with hospital practice; must have studied Dentistry at a dental school, or with a practitioner of Dentistry for two years, in addition to the two years' attendance upon medical teaching, and lastly, must pass a specified examination. Foreigners who are graduates would be required to pass the examination, but may be excused from other requirements by the Minister of Public Instruction. Ten years' practice in France confers the right to practise without examination, and less than ten years entitles the practitioner to present himself for examination at any time within three years. The commission express the opinion that the title of doctor (M.D.) is beyond the reach of Dentists, both present and future; and that the requirement of this degree would so limit the number of future Dentists that they would be unable to meet the demands of society.

"We want the necessary guarantees. We do not want useless guarantees. Why require of the Dentist a knowledge of medicine in all its branches, when he will limit his treatment to the mouth and its appendages?" So argue the Commission.

On the other hand, Dr. Magitôt contends that the practitioner of Dentistry should have the same knowledge of medicine as the specialist who treats diseases of the eye, the ear, or the bladder. The medical school of Val de Grace, and also the Faculty of Medicine of Lille, have instituted lectures upon the diseases of the mouth and teeth. Dr. M. adds that the diploma of the Dentists of Germany has a very low reputation, and that the Dental diploma of the United States is "absolument miserable." He demands that the Faculty of Medicine shall control the practice of Dentistry in the same manner that it does that of the oculist, aurist, gynæcologist, &c., and that the Faculty shall exact the diploma of medicine of every intending practitioner of Dentistry.

It seems evident that the idea of Dr. M. will not prevail, but that in France a similar course will be pursued to that which exists in England and the United States, and that a Dental diploma will be regarded as sufficient to authorise the recipient to practise Dentistry in French territory.—*Missouri Dental Journal*.

THE DIFFUSION OF BACTERIA.

THE researches of MM. Pasteur and Darwin have shown how earthworms may aid the diffusion of small organisms, some of which may produce disease. Professor Schnetzler states that the dejections of earthworms always contain numerous living bacteria and their germs (the hay-bacterium included). It is clear that bacteria in enormous quantity float in the air about us; and we have at easy command, Professor Schnetzler points out, a small apparatus traversed by about 8000 cubic centimetres of air per minute, which may inform us as to those floating germs. This is no other than the nasal cavity, on the mucous surface of which air-particles are deposited. To observe these he advises injecting the nose with distilled water (completely sterilised) by means of a glass syringe previously calcined. The liquid so obtained is put in one perfectly clean watch glass and covered by another. With a microscope magnifying 700 or 800 one finds, among various particles in the liquid, some real live bacteria. If the liquid be kept a few days in a clean glass tube hermetically sealed, the bacteria are found to have increased very considerably. One sees *Bacterium termo*, *vibrio*, *spirillum*, *Bacillus subtilis*, even some *infusoria*, and spores and fragments of fungi. Professor Schnetzler has further successfully cultivated the organised germs by means of a mixture of gelatine and distilled water. Why do not those bacteria in the nasal cavity always multiply and develop and penetrate to the windpipe and lungs? Their progress is doubtless opposed by the vibratory movements of cilia (or minute hairs) in the air-passages, and the weakly

alkaline reaction of the nasal mucus may (it is also suggested) be unfavorable to some of them. Colin has proved that bacteria producing acid fermentation perish in liquids with alkaline reaction. Infectious bacteria may, however, multiply to a formidable extent on living mucous surfaces, witness the growth of the *micrococcus* of diphtheria, brought by the air into the air-passages; also the *bacterium* of anthrax. The *bacillus* of tubercle, as Koch as lately shown, may be transmitted from one person to another by the air-passages. Professor Schnetzler thinks hay fever may also be due to bacteria entering the nose. While the development of bacteria on normal mucous surfaces is usually limited, millions of them are found in the dejections of healthy children.—*World of Science*.

POMPEIAN SURGERY.

A REMARKABLE collection of surgical instruments has been discovered at Pompei, and removed to the Naples Museum. It evidently belonged to one practitioner or establishment, and is as large an equipment as the modern surgeon is usually supplied with. One of the most interesting instruments is a long rod with a metallic plate at one end at an angle of 135° ; it was first thought to be a cautery for internal operations, but its remarkable resemblance to the modern laryngeal mirror suggests the possibility that it was employed in a similar manner in ancient times.—*Chemist and Druggist*.

As so many applications have been made for copies of Mr. Osborne's paper on Anæsthetics, we beg to inform our readers that the paper in question was originally intended solely for private circulation, but we hope in our next issue to be able to inform our readers where the same may be obtained, or to publish the same *in extenso*.

Reports of Societies.

ODONTOLOGICAL SOCIETY OF GREAT BRITAIN.

THE first meeting of this Society after the vacation took place at 40, Leicester Square, on Monday, November 6th, Samuel Lee Rymer, Esq., President, in the chair.

The minutes of the previous meeting having been read and confirmed,

The PRESIDENT welcomed the members back to town and hoped they had enjoyed their holiday. He also alluded in touching terms of the losses the Society had sustained in the deaths of two honorary members, Mr. J. T. Clover and Mr. Alfred Geo. Canton, and proposed that a vote of condolence be conveyed to the members of the several families in the name of the President, Council, and members of the Odontological Society of Great Britain. This having been passed *nem. con.*, he announced several contributions to the Society, and called upon Mr. Coleman for his casual communication.

During his remarks the ballot-box was passed round to elect several members, and Messrs. Harry Rose, C. D. Davies, and E. A. Bevers signed the obligation book.

The first communication Mr. COLEMAN made was in reference to a case in which epilepsy had existed in a boy where great dental irritation was going on, and by the relief from pain the epilepsy ceased. The only doubt on the subject was that the boy was receiving medical treatment at the same time. The second was the eruption of an upper wisdom tooth at the age of eighty-seven in a retired physician. There was also another feature connected with this case, which was, that for very many years there had been extensive exostoses springing from the inner side of the lower jaw, and which were now undergoing rapid absorption.

Mr. REDMOND described and presented to the Society's museum a very good example of perfectly calcified pulp in an upper molar, the roots of an upper molar extensively exostosed, and an exceptionally long bicuspid.

Mr. C. S. TOMES, F.R.S., invited all gentlemen to very carefully examine all pulps of teeth which had been destroyed by violence. He cited a case where two central incisors had been injured but were retained for four years, and when extracted the pulps were found to be very much shrunk and moist but with a total absence of offensiveness, bacteria, or micrococci. The object of his remarks was to endeavour to

ascertain whether alveolar abscess was entirely due to septic influences.

A very interesting paper was read by Dr. ALFRED CARPENTER, entitled "A Consideration of some of the Causes which give rise to Dental Decay," but, owing to its length, Mr. Oakley Coles proposed the adjournment of the debate, remarking that the numerous important points brought forward by Dr. Carpenter could not be fully discussed in the limited time they had at their disposal, which was agreed to.

A vote of thanks to Dr. Carpenter, Mr. Coleman, Mr. Redmond, and Mr. Tomes, terminated the proceedings.

We purpose publishing Dr. Carpenter's paper in a future issue.

MR. BARRAUD'S PICTURE OF THE INTERNATIONAL MEDICAL CONGRESS.

THE great congress of scientific men who made London their centre in the autumn of last year, has been taken advantage of by Mr. Barraud, the well-known photographic artist, to arrange a large portrait picture. When we recall the fact that no less than 648 members who attended this memorable congress are delineated, and that all the faces are portraits taken from life, some idea may be formed of the labour attendant upon the execution of such a work. Not only is the United Kingdom represented by some of the first surgeons, physicians, and Dentists in our midst, but France, Germany, Russia, Spain, and America, have their distinguished representatives, the features of each man of science being so distinctly taken that they can be at once recognised. It is with regret that we notice the absence of many of our own body who took a part for the first time in supporting the claims of Dentistry to be regarded as one of the branches of medical science, still the picture will be received as a handsome souvenir of that great event, and a portrait gallery on the most extended scale.

It is gratifying to find that the experiments made with steel and iron as a strengthener for vulcanite work have been eminently successful. The fear that the strong affinity of iron for sulphur would rot the hardened india rubber is contradicted by experience. Where the best and darkest rubbers are employed only a thin film is found to be discoloured, and the vulcanite adhering slightly to the iron adds to the solidity of the whole, perfect rigidity being the result.

Dental News.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

At a meeting of the Board of Examiners in Dental Surgery, held on the 25th ultimo, the following candidates, having passed their examinations to the satisfaction of the Board, were admitted Licentiates in Dental Surgery:

Albert, Henry Louis, Sloane Street, S.W., student of the London Dental and Middlesex Hospitals.

Andrew, John J., Belfast, of the London Dental and Middlesex Hospitals.

Bate, Frederick William, Alexandra Road, N.W., of the National Dental and Middlesex Hospitals.

Cornelius, William Fryer, Teignmouth, of the London Dental and Middlesex Hospitals.

Edwards, Richard, Pontdolgoch, of the London Dental and Middlesex Hospitals.

Elston, John McKno Ackland, Exeter, of the London Dental and Charing Cross Hospitals.

Gould, Horace John, Exeter, of the London Dental and Middlesex Hospitals.

Hughes, Morgan, Redhill, of the National Dental and Westminster Hospitals.

Jester, Alfred Horace, Preston Park, Brighton, of the London Dental and Middlesex Hospitals.

Kissack, Frank Hill, Douglas, Isle of Man, of the London Dental and Middlesex Hospitals.

Patterson, William Todd, Kingsland, of the National Dental and Middlesex Hospitals.

Royston, Jonathan, Douglas, Isle of Man, of the London Dental and Middlesex Hospitals.

One candidate was referred for the period of six months.

THE following were the examination papers for the diploma in Dental surgery held on October 23rd:

From 2 till 4 o'clock.

Anatomy and Physiology.

1. Describe the mechanism of the joint of the lower jaw, and enumerate the muscles by which each of its movements is effected.

2. Describe the changes which take place in the heart

during a single beat and pause of the pulse, and the sounds by which these changes are accompanied, indicating the causes of the latter.

Surgery and Pathology.

1. What is meant by an epulis? What is the usual structure of such a tumour? and what treatment is appropriate for it on its original appearance and on its recurrence?

2. What means have been devised for the treatment of the more complicated cases of fracture of the jaw, and under what circumstances is each of these advisable.

From 5 till 8 o'clock.

Dental Anatomy and Physiology.

1. What teeth are used as sources of ivory? Mention any peculiarities in the ivory derived from the several animals, especially in that which has been employed for Dental purposes.

2. Write a short description of the development of minute anatomy and chemical composition of human dentine. How is its sensitiveness explained?

3. Describe specimens 1 and 2 under the microscope.

Dental Surgery and Pathology.

1. Name and briefly describe the tumours which have a Dental origin.

2. Mention some of the diseases and constitutional conditions which most markedly affect the teeth. What lesions do they respectively cause?

3. What are the peculiarities of palladium of Fletcher's and of Sullivan's amalgams, and of gold and tin foils used in combination? What differences in manipulation do the first three respectively require?

ROYAL COLLEGE OF SURGEONS, EDINBURGH.

DURING the October sittings of the examiners, Mr. William Thomas Elliott passed his first professional examination for the licence in Dental Surgery, and Messrs. Joseph Smithson Thompson (Dublin), Henry Blandy (Chesterfield), and Hume Purdie (Alford), passed their final examination and were admitted L.D.S.

FACULTY OF PHYSICIANS AND SURGEONS OF
GLASGOW.

THE following gentleman was admitted a Licentiate in Dental Surgery at the October meeting of the examiners:—
Arthur Petch Penrose, Amwell Street, E.C.

AT the recent examination for the Dental diploma the following questions were given:

Anatomy.

1. Distinguish between the lower jaw of a child, an adult, and an old man.
2. Give the course and distribution of the third cranial or oculo-motor nerve.

Chemistry and Physiology.

1. How many elementary bodies exist in the air, and in what condition?
2. Give two methods by which chlorides may be prepared, and give the tests for chlorine and chlorides.
3. Mention what purposes are served by water in the animal economy.

Surgery.

1. Describe the operation for plugging the posterior nares in cases of hæmorrhage.
2. Give the symptoms and treatment of a fracture of the base of the skull, involving the petrous portion of the temporal bone.

Medicine and Materia Medica.

1. Describe the remote effects of dental disease.
2. Give the therapeutic action of rhubarb, castor oil, and sulphate of magnesia. State the doses of each.
3. Describe the characters, action, and uses of nitric acid, nitrate of silver, and chloride of lime, respectively.

Dental Anatomy and Physiology.

1. Describe minutely the anatomical features of the crown and roots of a first upper molar.
2. Tabulate the deciduous teeth, upper and lower, giving individually their period of eruption.
3. State what you know as to the stratum Malpighi, and what part it plays in the development of a tooth.

Dental Surgery and Pathology.

1. What conditions may give rise to ulceration of the gums, and what treatment would you adopt?
2. Describe the formation of an alveolar abscess, and the operations that may be performed to afford relief.
3. What forms of malignant disease are more commonly met with in the mouth, and how are they to be recognised?

The following were some of the *viva voce* questions.

Anatomy.

Given various bones of the head to describe, and name articulations and arteries, nerves, and muscles in relation therewith.

At what age do the two halves of the lower jaw unite?

Chemistry and Physiology.

What is the composition of the clouds, and what is the cause of rain?

At what temperature is water at its greatest density?

Define latent and sensible heat.

What is the sp. gr. of urine, and give the usual methods of taking the sp. gr. of liquids.

Surgery.

What is inflammation, its symptoms and treatment?

In what state are the ligaments when a joint is dislocated?

What is the treatment of fractures, and the difference between simple and compound?

Give the treatment for fractures of the jaw.

Medicine and Materia Medica.

Give the treatment for neuralgia, and on what symptoms would you stop giving quinine?

Name the various kinds of cinchona bark, where grown, and the pharmaceutical preparations of same.

On what part of the intestinal tract do rhubarb, jalap, scammony, and aloes act?

What dangerous symptoms may occur during the administration of nitrous oxide, and how would you treat them?

Dental Anatomy and Physiology.

Describe the structure of the dental periosteum, and give the sources of its blood supply.

The dental periosteum is said to consist of two membranes

—how are they named, and what difference have they in structure?

Explain the sensitiveness of dentine.

Describe the situation and structure of the membrana eboris.

Dental Surgery and Pathology.

What is abscess of the antrum, and how would you treat it?

If a central in a young subject were fractured through the neck, and the two parts brought into apposition, what kind of union could take place?

How would you treat sensitive sprouting?

DENTAL HOSPITAL OF LONDON, LEICESTER SQUARE.

THE Annual Dinner of the past and present Students of the Dental Hospital will be held on Saturday, December 2nd, at the Freemasons' Tavern, Great Queen Street, W.C. James Parkinson, Esq., in the Chair.

Gentlemen, either now or formerly connected with the Hospital or Medical School, who have not received the usual circular, will kindly accept this notice as such, and if desirous of being present, are requested to communicate with the Hon. Sec. of the Dinner Committee, DAVID HEPBURN, 9, Portland Place, W.

ASHENHURST FUND.

	£	s.	d.
Dunn, —, Esq. (Florence) .	1	1	0
Per Mr. Dunn—			
Sig. Catalini (Assistant) .	0	1	0
Sig. Rocchi (Assistant) .	0	1	0
Sig. Fatti (Assistant) .	0	1	0
J. J. W. { Students, Southsea }	0	10	0
A. E. B. {			

—Further subscriptions will be received by Messrs. C. Ash & Sons, the Dental Manufacturing Company, Mr. Rutterford, Messrs. Jamieson, and the Editor of this Journal.

DENBIGHSHIRE GENERAL INFIRMARY.

It is announced that the Committee of the above Institution are about to proceed to the election of an Honorary Dental Surgeon.

APPOINTMENTS.

MR. JOHN WELLINGTON LOOSEMORE, L.D.S. Irel., has been elected Hon. Dental Surgeon to the North Hertfordshire and South Bedfordshire Infirmary.

MR. REES PRICE, L.D.S. Eng., has been elected Dental Surgeon to the Sick Children's Hospital, Glasgow.

MR. WALTER SMITHARD, L.D.S., has been appointed Hon. Dental Surgeon to the Blind Asylum, Old Trafford, Manchester, vice Mr. R. Brookhouse, resigned.

Obituary.

MR. ALFRED GEORGE CANTON, M.R.C.S., L.D.S. Eng.

WITH deep regret we have to announce the death of Mr. Alfred George Canton, which took place on the 30th ult., at his private residence, Roselea, Acton, his age being 67.

Mr. Canton was a brother to Mr. Edwin Canton, Consulting Surgeon to the Charing Cross Hospital, and the father of Mr. Frederick Canton, the Secretary of the Odontological Society of Great Britain. With an earnest desire to elevate the position of the Dental practitioner he took a great interest in all those educational movements that marked this period of our history, and his labours are closely associated with some of the most important reforms that distinguished the founding of the Odontological Society. The degree of M.R.C.S. was obtained in 1843, and that of L.D.S. in 1860; in fact, his was one of the signatures to the memorial to the College of Surgeons asking for an examination in Dental Surgery.

Mr. Canton was on the first and second Council of the Odontological Society, 1856-7-8, Honorary Secretary in 1859-60-61, Foreign Secretary in 1862-63, and Vice-President

in 1871-72, and was offered the Presidency of that Society, which, owing to a serious domestic affliction, the death of his wife, he had to decline. Having retired from practice in 1875 he was made an honorary member of the Odontological Society, but his attendance has not been so frequent of late, and in consequence depriving many of the opportunity of enjoying his intellectual conversation and agreeable society. His willingness to render every assistance in the advancement of his profession, and his kind and amiable disposition won for him the respect of his fellow-practitioners.

MONTHLY REPORT OF CASES TREATED AT THE DENTAL HOSPITAL OF LONDON,

FROM OCTOBER 1ST TO OCTOBER 31ST, 1882.

Extractions	{ Children under 14	361
	{ Adults	919
	{ Under Nitrous Oxide	365
Gold Stoppings.....		210
White Foil ditto		3
Plastic ditto.....		566
Irregularities of the Teeth treated mechanically.....		105
Miscellaneous Cases.....		544
Advice Cases.....		134

Total..... 3207

WILLIAM HERN,
House Surgeon.

MONTHLY REPORT OF CASES TREATED AT THE NATIONAL DENTAL HOSPITAL,

FROM OCTOBER 1ST TO OCTOBER 31ST, 1882.

Number of Patients attended	1445
Extractions { Children under 14.....	356
{ Adults.....	645
{ Under Nitrous Oxide	74
Gold Stoppings	25
Sheets of Gold used, independent of Pellets.....	16
Other Stoppings	260
Advice and Scaling	135
Irregularities of the Teeth	55
Miscellaneous.....	222

Total 1772

FRED. WM. BATE,
House Surgeon.

To Correspondents.

1. Communications intended for insertion in the ensuing number must be forwarded to the Editor, at the Offices, 82, Mortimer Street, Regent Street, London, W., by the 8th and 23rd of the month, and must be duly authenticated by the name and address of the writer.
2. We cannot undertake to return communications unless the necessary postage stamps are forwarded.
3. It is earnestly requested of our correspondents that their communications be written on one side of the sheet only; and we also beg to call particular attention to the importance of a carefully-penned signature and address.
4. All communications relative to subscriptions and advertisements are to be addressed to the Publisher, Mr. J. P. Segg, 82, Mortimer Street, Regent Street, London, W.
5. The Journal will be supplied direct from the office on PREPAYMENT of subscriptions as under:

Twelve Months (post free) 14s. 0d.

Post-office Orders to be made payable at the Langham Place Hotel Office, to G. E. Skliros, 82, Mortimer Street, Regent Street, W. A single number sent on receipt of seven (penny) stamps.

ANSWERS TO CORRESPONDENTS.

- A. STEVENS, Clapham.—We have reason to believe that there will be another examination.
- F. D. WALKER (Doncaster).—The opinions expressed towards the gentlemen you name apply equally to the person on the card you enclose.

Communications have been received from Messrs. Ash & Sons (London), "Phosphor," Faculty of Physicians and Surgeons (Glasgow), T. F. Ken Underwood (London), Rees Price (Glasgow), J. Jamieson (London), Dental Manufacturing Company (London), F. Henri Weiss (London), William Hern (London), Alf. Stevens (Clapham), Royal College of Surgeons (Edinburgh), Wm. Stewart (London), F. J. Hines (Coventry), J. W. Loosemore (Hitchin), F. D. Walker (Doncaster), J. Lamplough (Liverpool), J. H. R. (Denbigh), Walter Smithard.

BOOKS AND PAPERS RECEIVED.

'Lancet.' 'Medical Times and Gazette.' 'British Medical Journal.' 'Pharmaceutical Journal.' 'Die Zahntechnische Reform.' 'Revue Odontologique.' 'Correspondenz Blatt für Zahnärzte.' 'L'Odontologie.' 'The Southern Dental Journal.' 'The Dental Advertiser.' 'Stocken's Dental Materia Medica,' Third Edition. 'Essays, Dental Metallurgy.' 'El Progreso Dentale.' 'Glasgow Medical Journal.' 'L'Art Dentaire.' 'Missouri Dental Journal.' 'Dental Record.' 'Le Progrès Dentaire.'

NOTICE.—We desire that it may be clearly understood that our pages are open to all for free expression of their views on matters connected with our profession. We only ask for terseness of expression and MODERATION IN TONE.

When otherwise unobjectionable, difference of political or other opinion will never be regarded by the Editor as a disqualification for the admission of any communication to the pages of the **BRITISH JOURNAL OF DENTAL SCIENCE.**

British Journal of Dental Science.

No. 357. LONDON, DECEMBER 1, 1882. VOL. XXV.

THE DENTAL DIPLOMA; WHAT IT IS, AND WHAT IT IS NOT.*

By S. J. HUTCHINSON, M.R.C.S., L.D.S. Eng.

THIS paper might be summed up in very few words, but this would not give the details which I am wishful to bring before this Association to-day.

It might be summarised thus:—The L.D.S. is a license to use the name of Dental Surgeon or its synonyms; but it is not a license to practise medicine, surgery, or pharmacy, nor to practise as an apothecary.

The L.D.S. is an evidence to the public that its possessor has either by long practice and by examination, or by curriculum and examination, satisfied the Examiners of the Colleges of Surgeons of his fitness to practise Dental Surgery.

This at least was the intention of its founders in 1859, and such is now the intention of the Legislature in passing the Dental Act of 1878. Parliament, however, went beyond this in making the L.D.S. compulsory, now and in future, on all those who wish to use the title of Dental Surgeon or its synonyms unless on the Medical Register. The law of the land also is jealous of the integrity of this title of Dentist, and will not allow it, under penalty of fine or imprisonment, to be used by any one whose name does not appear on the Medical or Dental Register. With regard to the Medical Register the law of the land is equally jealous, and allows

* Read at the Annual General Meeting of the British Dental Association at Liverpool, August 26th, 1882.

no one to use any title which shall imply that he is entitled to be on this Register unless qualified, and the L.D.S. is *not* found amongst the qualifying list of diplomas and degrees.

True it is that all medical men are not compelled to be registered if in practice, but the corporations of the Colleges of Surgeons and of the Apothecaries' Company, are guarded by their charters from infringement of their prerogative, and they in the one case allow no one to use the title "surgeon," and in the other no one can prescribe any medicine unless they are either licentiates of their company, or are qualified otherwise to be on the Medical Register.

All this may sound as if "Queen Anne were dead," but the whole question hinges upon this one point.

To take the apothecaries first; their charter gives them power to prosecute any one prescribing medicines without possessing the necessary degree or diploma, and it is incontestable that the L.D.S. does not appear in the list of recognised diplomas or degrees. But it may be urged in answer to this that pharmacists are regularly in the habit of prescribing for ailments to the patients who come to their shops for relief. This may be true, and unfortunately it is so; but two wrongs do not make a right, and the chemist who orders medicines for a cough or a cold (often without seeing the patient) is equally in the wrong with the L.D.S. who prescribes for neuralgia when he can find no sufficient Dental irritation. His duty is, clearly, to be sure that there is no Dental irritation, or if there be to treat it locally, and then if these means fail, to write to the medical attendant of his patient, and request his co-operation in the treatment of the neuralgia. The reason for this caution may be here given, since it is quite evident that it never was intended by the Dental Act that Dentists should act as quasi-apothecaries.

In the first place the Dental Surgeon is not in a position, especially in the case of female patients, to acquire that confidential knowledge of their various conditions and ailments which the medical man must of necessity inquire into before giving any of the more potent drugs. Besides, is the Dental Surgeon prepared to follow up his treatment and visit the patients at their own homes, in his treatment of neuralgia,

without being in consultation with the family doctor? because he cannot always rely upon his patient being able to leave the house, and then the family doctor would soon consider that the limitations of Dental Surgery had been overstepped.

Again, the Dentist who has been successful in curing his patient of neuralgia by constitutional treatment, has a very great temptation put in his way to attempt to cure headache, which may perhaps be due to indigestion or constipation; and the patient, who finds he has obtained relief from the prescription of his Dentist, naturally at a Dental visit asks for relief of the headache, which may come from quite another cause than the idiopathic neuralgia. Patients often ask for something for their throat, if sore. I say the temptation to prescribe is then great; for to refuse would appear to the patient like an admission of ignorance. Whilst in the first case, that of neuralgia, nothing is easier than for the operator, after local treatment, to say to his patient "I have put your teeth in order, you must see if you are relieved, and if not there is some constitutional cause at work. I should advise you to consult your family doctor, and if you like I will write him a note about the case."

To come now to the surgeon's aspect of the position; here we have a different standpoint, because there is no law to prevent a man practising as a surgeon; the law only says that he may not call himself one unless qualified, he cannot give a certificate of death, and if a patient dies under his care he is liable for manslaughter, and he can also be punished only if he wilfully and falsely represents himself to be a surgeon when he is not.

Now a Dental Surgeon is not a surgeon, and if he undertakes an operation out of his province he tacitly pretends to be a surgeon, and as wilfully and falsely represents himself to be one as if he had blazoned it forth to the world.

Later on I hope to define more exactly the province of Dental Surgery in accordance with my own views, but I desire here to quote from a leader on this subject which appeared in the 'British Journal of Dental Science' for May 15th, 1882, page 491, which says—

"We cannot help remarking that this case once again points to the advisability of a surgeon *always* being present during operations under nitrous oxide gas, even if he himself is not the administrator. Had a medical man been in the room there would have been the possibility that by prompt action, and possibly by performance of tracheotomy, the life of the patient might have been saved. The accident which took place so seldom happens that it is practically lost sight of, but the bare fact that such a possibility exists is sufficient to show the absolute necessity of having qualified help at hand. We say 'qualified' advisedly, because under such circumstances a few minutes of most precious time (lost whilst a medical man is being sought) may mean the difference of life and death. Many a Dentist under such circumstances could perform efficiently, if roughly, the operation of tracheotomy, but if his efforts—however, well-meant—failed to save life, what terrible responsibilities might he not incur."

I would also quote a leader which appeared in the Journal of this Association for the same date, page 196—

"We do not for a moment suppose the medical profession would grudge the small gain which a Dentist might occasionally find from the performance of a surgical operation; but the leaders of the medical profession and medical legislators would, nevertheless, certainly resent, and probably with effect, the usurpation of surgical practice by Dentists.

"No doubt many Dental Surgeons have not only the knowledge, but also the skill necessary safely to perform such operations, and it might be alleged in the same way by advocates of unrestricted practice, that this knowledge is possessed by many who practise upon the public while possessing no diploma whatever.

"Law is, however, made for the protection of the public, and unless legal restrictions are jealously guarded, abuses must occur, and the public must often surely suffer.

"In addition to the inexpediency, on these grounds, of the course which this Dentist thought fit to take, we consider that the grave responsibility involved in such a course is enough to deter the profession from following his example.

In the first place there is always a danger, although of course remote in trivial operations, that a fatal issue may result, and in that case, as the Dental licentiate would be unable to give the usual certificate, an inquest would be held, and possibly a verdict of manslaughter returned against the operator. In the second place, in the event of the operation turning out badly, the practitioner would lay himself open to an action for malpraxis, an occurrence not at all unprecedented even in the experience of eminent surgeons, in the case of ungrateful patients. Under such circumstances the commonly accepted limits of Dental practice must necessarily prejudice the defendant, who would be lucky if he escaped being mulcted in heavy damages. These and many other considerations which might be adduced may surely suffice to restrain Dental surgeons from venturing upon any such dangerous ground as is involved in trespassing beyond the well-known limits of their specialty."

With regard to Dental students making it their aim to acquire the M.R.C.S., as well as the L.D.S., I can only say, as Mr. Turner said at Cheltenham on the 6th inst., it is a very desirable ambition, but I do not hold that it is more expedient for an L.D.S. holding the M.R.C.S. to go out of his province as a Dental Surgeon than it is for a pure physician who happens to be F.R.C.S., as well as M.D., to perform an amputation.

But I do contend that the advantages of taking the M.R.C.S. are manifold, and chiefly that the course of study is, in itself, so interesting, the dresserships and clerkships and post-mortems give so much clearer an insight into disease and its treatment. The glorious study of practical physiology, which I hope before long will be compulsory for the L.D.S., and, above all, the feeling of equality with one's fellow-students, which the possession of the M.R.C.S. confers, all these reasons should induce every student who can afford time and money to try for the two diplomas. But, gentlemen, let me state once and for all that I consider the L.D.S. an ample and sufficient qualification for the Dental Surgeon in general, and if the M.R.C.S. cannot be obtained without the sacrifice of time which could be more efficiently devoted to

Dentistry, then, I say, by all means let the L.D.S. come first and never mind the membership !

Now that Professor Turner's motion has been carried by the Medical Council, which allows time spent in the work-room to count for the curriculum before passing the examination in arts, a scheme which I advocated in the February number of the Association Journal, I say now the Dental student has ample time to give to the thorough study of Dental Surgery, and can more easily obtain the M.R.C.S. also.

I have one word to say with regard to the L.D.S., and that is, that very much regret that more than one examining board has been created. I did hope that the "one portal system" for the L.D.S. would have been inaugurated with compulsory education and registration. Instead of this we find four examining bodies with varying tests and different standards of fitness, the result of which is that the one which has the lowest standard has sullied the fair fame of the L.D.S., and by conferring this diploma upon half-educated advertisers in the company, I will say, of "good men and true," these last, to their regret and mine, are indelibly branded with the same mark as the black sheep themselves.

Let us trust, however, that the earnest protest of our Business Committee to the Medical Council may be productive of much good, and, if it cannot eradicate this foul blot, may it at least prevent the leprosy from spreading.

I should myself have preferred to have seen one examining board only, constituted of two representatives from each of the four centres, and I am in hope that the day is not far distant when some such plan will be adopted.

With regard to the Medical Council it seems that opinions are there divided as to the sphere of the Dental Surgeon.

At their meeting on July 8th, 1882, Dr. Quain quoted words used by me at a meeting of the Odontological Society last year, about Dentists prescribing, but he went on to say:—"We have blindly created a class of partially educated practitioners, which will in the future give enormous trouble. We ought to have guarded against it by a clear definition of what Dentistry meant. This will be the result of our pro-

ceedings—to create a class of people who will think themselves fully competent to treat diseases constitutionally in every sense of the word.”

Dr. AQUILLA SMITH, however, replied :—“ Dr. Quain said something about the necessity of Dentists being fully qualified for constitutional treatment. I do not think it would be worth while to introduce medical qualifications purely upon that view. I take it, that a gentleman who obtains a license, as a Dentist, from the Royal College of Surgeons, would, from the education he has received as a surgeon, be fully qualified to undertake any constitutional treatment connected with Dentistry.”

But, gentlemen, although he may be fully qualified, it does not necessarily mean that he must use his knowledge upon his patients any more than a fully qualified medical man treats eyes, ears, and teeth, rather than send his patient to an oculist, an aurist, or a Dentist.

Dr. Aquilla Smith only endorses the views of Mr. T. A. Rogers, who ruled, when President of the Odontological Society, that as long as a tooth was in the head, the Dentist was justified in using constitutional treatment.

This is all very well, but does it mean that if a tumour is at the neck of and caused by a tooth, the tumour must be removed first and then the tooth, or must the tooth be removed, and then if the tumour does not disappear of its own accord, what is the next step? The tooth is not in the head but the tumour is. Can the L.D.S. then remove it, and the bone from which it springs?

I take it that he should not; therefore it is but logical to conclude he should not interfere with the tumour before removing the tooth, because although the tooth may be the exciting cause, yet the tumour affects the mouth proper, and a Dental surgeon is not an oral surgeon.

But it will be answered against me that an L.D.S. is called upon to treat fractures of the jaws, also cleft palates, which are of the mouth proper, but I maintain that as these cases nearly always come from medical men, the L.D.S. would be most wise if he undertook to treat fractures in co-operation with the surgeon, attending himself chiefly to the mechanical

appliances necessary, and to the local treatment of discharges by suitable washes and injections.

Congenital cleft palates are purely local lesions requiring mechanical treatment only, and it goes without saying that the L.D.S. should not attempt staphyloraphy or to sew up a cut lip from an accident nor yet a hare-lip. With regard to syphilitic disease and perforation of hard or soft palate, the constitutional treatment should, I maintain, be carried out by the surgeon, however much the L.D.S. may know about iodide of potassium and mercury.

In nine cases out of ten these cases come to the L.D.S. by the recommendation of a medical man, who would not appreciate the attention of his Dental friend taking the constitutional treatment out of his hands. This, of course, no man in his senses would do in the nine cases, therefore why should he do it in the tenth? Would he not be wiser to return the compliment and send his tenth patient to his medical friend, who may have sent him the nine cases for the benefit of the special knowledge of the Dentist.

By all means generalise the education of the L.D.S., but specialise his practice as much as you like.

Gentlemen, it is because I am such a believer in the L.D.S. as *the* qualification for a Dentist, and because I believe in the Dental Act and in the British Dental Association, that I implore you to weigh carefully my words, and to take away the sting of the reproach hurled at us by Dr. Quain, and let us not in the future be stigmatised as "a class of partially educated practitioners who consider themselves fully competent to treat diseases constitutionally in every sense of the word." I say, let us never give cause for this even to be hinted at about us, let us avoid the very appearance of evil, let us shield jealously the L.D.S. even from its friends, who would by this very undue zeal *discredit* it, and let us stand forth to the Medical Council and to the world as a body of *fully educated Dental* practitioners, who, knowing our work, what it is and how to do it, let us do it with our might, proud of our leaders, proud of our L.D.S., won for us by their endeavours, and proud of our British Dental Association which jealously guards the honour of the L.D.S. !

THE TREATMENT OF CLEFT PALATE.*

By CHRISTOPHER HEATH, F.R.C.S.,

HOLME PROFESSOR OF CLINICAL SURGERY IN UNIVERSITY COLLEGE, LONDON.

GENTLEMEN,—Having performed the operation of staphyloraphy for the closure of a fissure in the soft palate of a girl of fourteen, before you last week, I take this opportunity of giving you some details of the subject which will, I think, be of service to you as practitioners.

Cleft palate occurs in infants otherwise well formed, or in combination with hare-lip; and in either case it may affect the soft palate only, or both the hard and the soft palates. When hare-lip is present, the fissure usually extends from the lip through the alveolus and the entire palate, but there are many exceptions, a fissure of the soft palate alone frequently accompanying a single hare-lip. That both affections are the result of arrest of development in the early weeks of foetal life cannot be doubted, and that they are hereditary cannot be denied; still, cases of cleft palate occur in families not known to inherit the malformation; and, in the great majority of cases, it will be found that the mother has been much out of health in the early weeks of pregnancy, or that the pregnancy has followed very closely upon a previous one, or has occurred during lactation.

The experience of Professor Haughton, of Dublin, first showed, in the case of the larger carnivora, the effect of diet upon the production of cleft palate; and it is very desirable, in the case of a parent the subject of the deformity herself, or having already given birth to a child with cleft palate, that, in subsequent pregnancies, every care should be taken to improve her health, and to administer food and medicines calculated to promote the formation of bone.

When a hare-lip and cleft palate are continuous, the latter deformity is sufficiently obvious; but when a cleft palate occurs alone it may be easily overlooked for the first few

* A Clinical Lecture delivered in University College Hospital, and published in the 'British Medical Journal.'

hours of life, and the earliest intimation of the malformation may be given by the inability of the infant to suck, and by the fact that milk introduced into its mouth with a spoon returns through the nostrils. Under these circumstances, infants are often allowed to pine away through insufficient feeding; but, with proper care, this may generally be obviated.

A large-sized india-rubber teat, or an ordinary covered spoon, such as is used for the administration of nauseous medicines, may be used to convey the milk to the gullet; but a much less troublesome and more effectual method is that adopted by Mr. Oakley Coles, who attaches a flap of elastic india rubber (Fig. 1) to the nipple of an ordinary feeding-

FIG. 1.

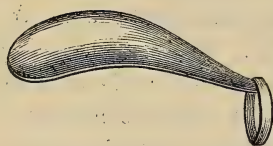
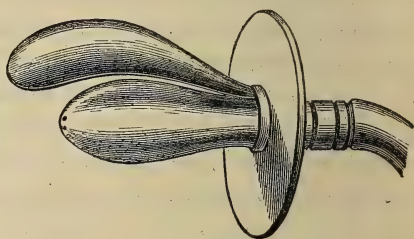


FIG. 2.



bottle. This overlies the nipple (Fig. 2) and is introduced into the mouth with it, and, when the infant is suckled, rises up against the cleft, and enables the child to swallow. The india rubber is undoubtedly the cleanest and most effectual flap which can be employed; but I have often directed the use of a leaf-shaped piece of kid-leather with advantage, when the india rubber could not be readily procured. Mr. Francis Mason has employed a very thin plate of soft metal, moulded to the patient's mouth, but allows that the instrument is not available in all cases. If no other plan be adopted, the mere closing of the nostrils by the nurse's finger and thumb at each effort of deglutition, will give material assistance to successful swallowing.

The question of surgical interference, in cases of cleft

palate, is one which must be considered as still *sub judice*. That it is possible to close the entire length of a cleft, extending through both hard and soft palates, at an early age, is undoubted; but it may be questioned whether, in many of these cases, a better result, as regards articulation, would not have been obtained by the use of some form of apparatus. It is most satisfactory to the parents of a child, suffering from any congenital malformation, that the deformity should be repaired by operation as soon as possible; but grave disappointment is apt to follow when, as years go on, the power of articulation fails to improve in the ratio anticipated. The sufferer is inclined to complain that the operation has not improved his voice so much as his power of eating comfortably, and is sometimes annoyed to find that no mechanical contrivance can be subsequently worn, without undoing what was effected with much trouble and suffering some years before.

In deciding, therefore, as to the propriety of an operation for cleft palate, it is necessary to take into account, not merely the mechanical difficulty of bringing the soft tissues on each side of the median line into sufficiently close proximity to unite, but also the length of the palate, and the probability that it will sufficiently shut off the mouth from the nose to prevent the nasal intonation commonly met with both before and after operations for cleft palate. In no case of successful operation for cleft palate, I believe, is the palate sufficiently in contact with the back of the pharynx to allow water to be injected from one nostril into the other, without entering the pharynx when the mouth is open, as is the case in well-formed throats. And yet, many of these patients have very little nasal intonation, which is to be explained, I believe, by the hypertrophied condition of the muscles forming the pillars of the fauces, which may be seen when the patient attempts to swallow with the mouth open, acting powerfully to narrow the fauces, and thus make up for the deficient length of the palate.

Before deciding, therefore, as to the advisability of an operation upon the soft palate, it is well to grasp the chin of the patient and hold the mouth open, so as to aid his

efforts at swallowing, when, if the two halves of the soft palate come into contact in nearly their whole length, while the superior constrictor and palato-pharyngei muscles closely approximate the palate and pharynx, the case is one in which union may almost certainly be obtained, and probably a fair result as regards phonation.

In the case of the hard palate, there is an undoubted disposition for the two sides of the cleft to approach one another for some years after birth, and this is particularly seen in cases complicated with hare-lip, in which the successful closing of the lip tends powerfully to approximate the divided alveolus and palate. But success in closing the fissure in a hard palate depends in no small degree upon the mode in which the palate is arched. As was pointed out by Sir. W. Fergusson, in cases of highly arched-palates, which in section would resemble a Gothic arch, it is comparatively easy to dissect down the muco-periosteum sufficiently to make the flaps approximate; while in palates but slightly arched, and the section of which would resemble a Norman arch, it is difficult to get the flaps together, and the tension must necessarily be severe.

It is quite true that these cases of slightly arched palate give the best results as regards the voice when the operation is successful, and that the high palates when most successfully closed are apt to lead to disappointment; but this might well be anticipated, since it is by no means uncommon for a person with a healthy high palate to speak with a nasal intonation, closely resembling that of one suffering from a congenital cleft or perforation by disease.

The effort involuntarily made by all patients the subjects of cleft palate to shut the nose off from the mouth in speaking is aided as they grow up by a voluntary closure of the nostrils, which is very remarkable. Ordinarily, in man, the nostrils are perfectly quiet in tranquil respiration, and it requires considerable effort to close them, as when plunging the face into water. A patient with cleft palate, on the contrary, may be noticed to put his compressores narium into strong action every time he speaks or swallows; and it is very difficult to overcome the habit when the necessity for it has passed away,

either from a successful operation, or the adaptation of a well fitting apparatus.

The operation of staphyloraphy for closure of a cleft palate was, up to the last fifteen years, almost invariably postponed until the period of puberty or later, so that the surgeon might have the patient's self-control to aid him in his troublesome and tedious operation. A few cases had, no doubt, been operated upon in childhood, with indifferent success, by Mason, Warren, and others; but to Mr. Thomas Smith, of St. Bartholomew's and the Children's Hospitals, is mainly due the credit of showing that it is possible to operate in infancy under chloroform, not only without risk, but with very great success. In his paper in the 'Medico-Chirurgical Transactions' (1868), Mr. Smith described a gag by which the mouth of a patient can be kept open efficiently, and which, in some form or other, is essential for the due performance of the operation, now performed by him as follows. The patient is placed on a table of convenient height, facing the window and, if possible, a northern light. The head is supported by an air-cushion, and is firmly held by an assistant standing behind, while the arms and legs are strapped down to prevent struggling. The operator stands on the right of the patient, and the chloroformist on his left. The patient being thoroughly narcotised, the gag is introduced and the mouth screwed open, the rings of the gag being held by the thumbs of the assistant supporting the patient's head. The edges of the cleft are then pared with a slender double-edged knife, which is thrust through the margin of one side of the soft palate held tense with forceps, and made to cut up and then down to the end of the uvula. The margin thus separated is caught with the forceps, and the section completed up to the angle of the cleft, if possible, at one sweep, or if not, by a reapplication of the knife. The same process is repeated on the other side; and, in favorable cases, it is both possible and satisfactory to remove the parings of both sides of the palate in one piece.

(To be continued.)

THE LANCET IN DENTITION.

By THOS. S. SOZINSKY, M.D., Ph.D.

It is noted by Southy, in his common-place book, 'The Doctor,' that "Rogers, who had been about the person of Charles the Second, died at ninety-six, in cutting his teeth. He had four, and many more were coming, which so inflamed his gums that it proved fatal."

"Cutting of the teeth" is, rightly or wrongly, credited popularly with the destruction of many lives, and it would seem from this case that it is liable to be accused of being at work even in the terminal stage of existence. In the nursery it has always, perhaps, been regarded as a very serious matter. Nevertheless, this common belief, like many another, may not be well founded. Cumulative tradition has possibly served to, at least excessively, emphasise the balefulness of the process. It may, however, be taken for granted, I believe, that the amount of suffering experienced by children in general while getting their primary teeth is very considerable. It causes decided uneasiness in almost all, and decided danger in some. If it rarely or never destroys life directly, it certainly not unfrequently does indirectly. But I am not sure that it is entirely wrong to give it as the actual cause of death in not a few cases. This is at any rate done. In Philadelphia, about thirty deaths are attributed to it, on the average, yearly, in the bills of mortality. During the census year ending June 30th, 1870, there were three thousand two hundred and forty-seven deaths attributed to it in the United States. There is assuredly some ground for the prevailing belief that dentition is the direct or indirect source from which flow many of the ills and a large share of the mortality of babies.

It would appear, however, that there are some physicians who seriously regard the coming of the teeth as an extremely innocent matter, doing, as they say, a purely

physiological process. I would advise such that it is assuming a great deal to take it for granted that dentition is in all cases a purely physiological process. Perhaps in no child is it absolutely physiological; it is at best only approximately physiological. In a recent address, Dr. B. W. Richardson went so far as to declare that he "had never seen a healthy child," never one "that had not in it either some actual or latent constitutional disease." At any rate, there is good reason for believing that in a large proportion of children, especially in large cities, dentition is of decidedly pathological import. As is true of many other troubles, it generally tends to be more marked in proportion to the degree of unhealthiness of the child. And let it be borne in mind that the sensibility of all infants is great, and of some sickly ones such that even a trifling irritation may be followed by serious constitutional and other effects.

But it is not my purpose to speak of the subject of dentition. This has been done very well in a lecture published in this journal recently. It may be well, however, to say, in the words of John Hunter, in his admirable treatise on the natural history and diseases of the teeth, "the symptoms are so various in different children, and often in the same child, that it is difficult to conceive them to be from the same origin, and the varieties are such as seem to be beyond our knowledge."

Now, when to the discerning senses of the observing sensible physicians a child is suffering severely from the eruption of one or more teeth, relief should, of course, be procured as soon as possible. How is this end to be attained? The advice given by many amounts to little more than to use a soothing-syrup—*a la* Winslow—of some sort. Meeting the various indications is, in truth, in numerous cases, far from being an easy matter. Such measures as serve to favour the general health are particularly indicated in every case. Careful regulation of the diet, daily bathing, and a fair amount of exercise, especially in the open air, are among the items of great significance. Make the process as little pathological as possible by making the

condition of the child as physiological as possible. Anodynes, antacids, febrifuges, and other remedies, including local applications, may or may not be called for. But I believe the remedy most imperiously called for, in at least bad cases, lies in the use of the lancet.

Of the use of the lancet in dentition it is curious to observe how different are the opinions entertained. Some do not hesitate to say that it is of no value. Thus, in a recent widely circulated work on the diseases of children, by Dr. Henoch, a Berlin practitioner of seemingly large experience, it is said: "It is now generally held that every attempt to facilitate the eruption of the teeth, and thus remove the symptoms due to difficult dentition, is absolutely useless. I have in earlier years performed scarification with sufficient frequency to convince myself of its entire inutility; and it even appears to me that the cicatrix formed may increase the difficulties connected with the penetration of the teeth." Here is what Dr. J. Lewis Smith says on the subject, in his work on the 'Diseases of Infancy and Childhood': "The gum-lancet is now much less frequently employed than formerly. It is used more by the ignorant practitioner who is deficient in the ability to diagnosticate obscure diseases than by one of intelligence, who can discern more clearly the true pathological state. Its use is more frequent in some countries, as in England, under the teaching of great names, than in others, as France, where the highest authorities, as Rilliet and Barthez, discountenance it. . . . I know no accidents of dentition which require prompt scarification, except suppurative inflammation of the gums, convulsions, and paralysis. In other cases the operation may be safely postponed till other measures have been employed." In Drs. Meigs and Pepper's treatise on the 'Diseases of Children' it is said: "Lancing of the gums is undoubtedly a most important point in this [laryngismus stridulus] and other diseases of childhood connected with dentition. We have long been convinced, however, from personal observation, that a resort to this operation merely because the child is passing through the period of dentition is at least useless.

We have never found it do any good unless the teeth are near enough to the surface to produce manifest swelling, attended with heat and soreness of the gums. So long as the gum is hard, insensible, not turgid, and of its natural colour, and the mouth not hot, cutting has done no good." That wise old master of the healing art, John Hunter, after speaking of symptoms arising from dentition, says: "So far as my experience has taught me, to cut the gums down to the teeth appears to be the only method of cure."

Truly the authors quoted from differ sufficiently as to the value of the lancet in dentition. It is worth while to dwell a little on what they say.

Dr. Hensch speaks very rashly, to say the least, in declaring that "it is generally held that every attempt to facilitate the eruption of the teeth is absolutely useless." The idea was not formed from an extensive acquaintance with the literature of the subject. Again, the statement of the doctor as to his experience with the use of the lancet may well lead one to infer that he has had hardly any experience with it. He is like those who, although having no knowledge of the use of the lancet in general medicine, yet unhesitatingly venture to condemn it. What he has to say about "the cicatrix" may rightly produce the impression that he has not made himself master of the subject. If the lancing is properly done there need be no cicatrix, and if there be one it will not serve to retard the "penetration" of the tooth. As Hunter long ago said, at the point of cicatrix the gum offers the least resistance to the appearance of the tooth.

Dr. Smith is doubtless right in holding that ignorant practitioners are very apt to use the lancet when not required, and in his intimation, that the use of it is largely a matter of fashion. But I am also quite sure that too many practitioners who are usually regarded as intelligent do not use it as often as they should. His statement that he "knows no accidents of dentition which require prompt scarification, except suppurative inflammation of the gums, convulsions and paralysis," is a trifle extraordinary. What of cases of, say, laryngismus stridulus and of cholera

infantum, in which dentition bears largely a causative relation?

Except in the diseases he mentions, the doctor would postpone the operation "till other measures have been employed." It scarcely follows from this that he is acquainted with the cardinal principle of sound medical practice. In treating of the same subject, Hunter correctly remarks, "It would be better at once to remove the cause than to be attempting from time to time to remove or palliate the effect." Wasting time trying to palliate effects, while the cause is allowed to act, lets many a little innocent go unnecessarily and speedily into the grave.

Drs. Meigs and Pepper "have long been convinced, from personal observation, that a resort to the operation merely because the child is passing through the period of dentition is at least useless." It is rather strange that they were ever otherwise than "convinced." No sensible physician cuts a child's gums indiscriminately. Resorting to the lancet when there is no evident need for it, no matter how the child is affected, is, as Dr. West fitly says, "barbarous empiricism." The idea that it is the approach of the teeth "near to the surface" which produces the troubles which are met with in dentition is not of necessity a truth. At least the main source of trouble in the appearance of a tooth is not at the surface; it is at the base. The backward pressure on the sensitive nerves and other parts give rise largely to the pain and irritation about the gum. This backward pressure may set up trouble a considerable time before the tooth nears the surface, the tension then being almost or quite as great as later. In fact it often, or perhaps I should say generally, happens that there is a spell of trouble some time before the tooth is about to make its appearance. In some it is very marked and it may be repeated. The capsule becomes distended and the surrounding parts hyperæmic and painful, and there is a free flow of saliva. In any case where there is evidently decided irritation about the gum the lancet should be used. It should be used even if for no other reason than to relieve the child of local pain, of toothache, an affliction which, as many know, and Burns told in expressive

poetic phrase, is something awful enough in itself, a pain which at its worst Bacon had reason in believing to be "one of the sharpest of pains." There need be no hesitancy in using the lancet repeatedly if the gum is at any point tense and angry looking. Says Hunter, "I have performed the operation about ten times upon the same tooth, where the disease had recurred so often, and every time with the absolute removal of the symptoms."

That the lancet will afford relief in the presence of very marked symptoms every one surely is aware who knows how to use it. It is an instrument by which much may be done to lessen suffering, cure disease, and save life. Here is a delicate child, somewhat over a year old, languid, pale, the victim of one or two convulsions, with contracted brows, a temperature of from 101° to 102° , a tendency to diarrhoea, and a slight bronchitic cough. I lance his cutting tooth, and within a few hours he is almost entirely well. I have done the thing so often in his case that I know precisely what the result will be. This lymphatic child of fifteen months has a developing croup; the hurried breathing, the noise in the throat and all the other symptoms are becoming decided. I lance his appearing eye teeth and he begins immediately to get well. There is a strong looking boy, nearly two years old, with a temperature of 103° , and a marked cold on his chest. I prescribe appropriate remedies, but at the end of two days he is no better. I lance a pair of coming molars, and next day there is no fever hardly, and the cough speedily vanishes. That poorly cared for child, who has about completed her first year, is evidently from the high fever (103.5°), nausea, and tendency to diarrhoea, drifting into the fatal grasp of cholera infantum, the midsummer heat favouring the development of that serious infantile disease. I look at her mouth and find that the gums over both the eye and the stomach-teeth are tense and angry looking. I lance these points, and very simple measures restore the patient, within forty-eight hours, to her usual state of health. But I need not give an extended recital of cases. I am of the opinion that early, and, if need be, repeated lancing would save many who should otherwise perish from convulsions, bronchitis,

cholera infantum, and other diseases. Especially in spent children, in the warmer part of the year, should there be no delay. Statistics of the census year ending June 30th, 1870, show that there are more deaths attributable to dentition in the third quarter of the year than in the two preceding ones together, and many more than in the first and fourth together. The Philadelphia bills of mortality present a very similar showing.

In order that lancing the gums may do as much good as possible it must be done well, but, of course, not butcherly. A plain incision with a very sharp lancet is not enough; it will generally do only a little good. This is what is not uncommonly done. Let there be several more or less irregular incisions made, with a somewhat dull lancet, and the hoped-for result will very certainly follow. In bad cases the gum should be very thoroughly scarified, so thoroughly that there will be little or no likelihood of the parts uniting over the tooth. And it is proper to extend the incisions well to the sides of the coming tooth. This may be called for after the tooth has partly appeared. Whatever bleeding occurs will be beneficial; it will serve to relieve the hyperæmia and pain. In fact, in not a few cases it is the bleeding that is principally called for; local depletion affords immediate relief. It will not be harmfully profuse, likely, in any case. Says Hunter, "I never saw a case where the bleeding proved either inconvenient or dangerous."

What harm may result from lancing the gums, under any but very extraordinary circumstances, it would be hard to state. I do not feel sure that it can do any, and in this belief I am fortified by the opinions of perhaps all Dentists and others who have carefully studied the matter. It may cause temporary pain. Still, this is not very marked. Many a child will open its mouth and have several teeth thoroughly lanced without giving a whimper. As for the tenderness of the gum, which there may be for a day or two, from thorough lancing, it is comparatively a small matter. The idea that lancing will retard the development of the tooth has, I believe, no just foundation. It would appear

to be based on the erroneous notion that when lancing is practised the tooth should immediately appear. It is probable that in no case is there any more than an apparent delay. As already stated, the irritation about the gum which calls for the use of the lancet may arise weeks before the tooth approaches the surface. A tooth does not receive its nourishment from the structures above or about its crown. The cicatrix and hæmorrhage I have already spoken of at sufficient length. In all proper cases the lancet may, then, be used, with confidence that it is a markedly non-injurious, as well as an almost infallible means of relief.—*Med. and Surg. Reporter.*

Reflections from the Surgery.

AN EXPERIENCE WITH THE NEW ANÆSTHETIC—CHLOROFORM, ÆTHER AND ABSOLUTE ALCOHOL.

Reported by F. HENRI WEISS, L.D.S. Eng.,
DENTAL SURGEON TO THE NATIONAL DENTAL HOSPITAL.

A YOUNG lady, æt. 18, whose lower teeth were so carious that only two out of the complete set were considered good enough to retain—the result of hereditary syphilis—was put under the influence of the above anæsthetic by her regular medical attendant, who has had great experience in its use, to give me the opportunity of excising the six incisors, extirpating the nerves, and extracting the rest. The means adopted to administer it were very simple, the whole apparatus consisting of a thick felt cone five inches long, covered with oil silk, with an opening to go over the mouth and nose, and a hole at the apex to admit the air. Two drachms of the mixture were poured over the felt and applied gently to the face, and in two minutes and a half anæsthesia was complete. I excised the incisors and drilled into the pulp cavities, having fixed the mouth open with a Coleman's gag. The administration was continued and I

extirpated the nerves. As there was every symptom of sickness, I did not proceed further, and about half a pint of cream-coloured vomit was thrown up. In about two minutes all was ready to proceed, so I extracted the teeth and made preparation for the restoration of consciousness. The pulse was quite steady, and the hands and feet particularly warm, the respiration was regular, but no sign of sensibility presented itself. The face was slapped with a damp napkin, and some Liq. Ammon. Fort. applied to the nostrils. Five minutes elapsed and the nitrite of amyl was given in the usual way with the effect of increasing the pulse and bringing a little more colour to the face. Time went on and consciousness was as far off as ever. A teaspoonful of brandy was put into the mouth, which induced vomiting. The ammonia was again applied to the nostrils with a slight sign of discomfort, as the head moved a little away from it. Having read that if mice were put under the influence of chloroform and were held up by their tails they would make attempts to bite, inversion was tried, by tilting the operating chair back until the head-rest touched the ground, without the least beneficial effect. Thirty minutes having elapsed, and beyond the prolonged insensibility no unfavorable symptom presenting itself, we came to the conclusion that the patient was under the influence of the alcohol. By repeating the slapping and ammonia, which was now decidedly objected to, consciousness returned, and in forty minutes after the operation ceased, she was walking about the room with a most unsteady gait, and complained of feeling dreadfully sleepy. We induced her to have her cloak put on, and in a few minutes she left in her brougham with her friends. I saw her three days after, when she said she did not suffer during the remainder of the day more than one attack of sickness, when she brought up a quantity of blood, which had evidently been swallowed, and a slight sense of drowsiness. The prolonged insensibility is quite unusual, but the happy freedom from the sickness which invariably follows the administration of chloroform is the rule, and in that, I think, favours the use of this anæsthetic.

British Journal of Dental Science.

LONDON, DECEMBER 1, 1882.

IN our last issue we had occasion to speak on the position of the Dental Surgeon in his capacity of physician, surgeon, and pharmacologist, and since then Mr. S. J. Hutchinson's paper, read at the Annual General Meeting of the British Dental Association at Liverpool, has been published in full in the journal of that body. We have much pleasure in reproducing it, as it contains much that ought to be known upon this vexed subject. Whenever the question of prescribing by the Dentist, or operations apart from the ordinary Dental work have been performed, Mr. Hutchinson has taken an early opportunity of expressing his disapproval of the undertaking, giving as his reason that the L.D.S. in no way entitles the Dentist to do so.

All who have the pleasure of knowing Mr. Hutchinson know full well that his opinions are the result of conscientious reasoning. Possessing as he does the M.R.C.S. diploma, in addition to the L.D.S., he places that qualification second to the latter when Dental subjects are under discussion. He further maintains that there is no degree that will so well fit a man for the practice of Dental Surgery as the L.D.S., at the same time, it is this question of *Dental Surgery* that requires to be better understood.

We have no reason to doubt that Mr. Hutchinson's anxiety is founded upon the probable consequences which might follow the unsuccessful treatment of a case by a Dentist if it were brought before the General Medical Council. Our feelings are therefore identical with Mr. Hutchinson in that respect.

To guard against this eventuality we must seriously ask our professional brethren not to attempt anything which

trespasses beyond their accustomed limits of practice without possessing the necessary knowledge which would enable them to cope with complications. It is known that a simple extraction is attended with the chance of failure, so that success cannot in any case be positively assured, but knowing that one course of treatment can follow another until all is accomplished, gives us the confidence in what we undertake. To this must apply all that the Dentist does. He should be able to forecast all that *may* occur and be ready to follow up each change as it takes place. To bring the matter intelligibly before our readers we must consider the relative position the L.D.S. degree holds to Dental Surgery. Mr. Hutchinson puts it that the L.D.S. gives us, first, the privilege of calling ourselves Dental Surgeons and its synonyms; and second, it is a guarantee to the public that its possessor has either by long practice and by examination, or by curriculum and examination, satisfied the examiners of the Colleges of Surgeons of his fitness to practise Dental Surgery. We cannot expect a clearer definition of the title, and it only remains for us to point out the relative position Dental Surgery holds to the L.D.S. One thing is freely acknowledged: that Dental Surgery of to-day is totally different to that of thirty years ago, not only in the amount of Caries existing, but the knowledge of the structures involved renders the treatment required to be quite different. It is a science, and, like all others, will develop in course of time. It cannot be expected that men will leave off research, and content themselves with following the stereotyped rules of practice of thirty years ago. Far be it that we should recommend a reckless treatment, for we have stated positively that nothing should be attempted, without a certain guarantee—by a knowledge of possible complications—of success.

The curriculum for the L.D.S. embraces all the subjects that are likely to be met with in the legitimate practice of Dental Surgery, so that if the examinations which follow the study of these several subjects are not searching enough to prove the proficiency of the candidate the Colleges of Surgeons will have a grave responsibility. It is impossible

for the Dentist to desist prescribing for his patients unless he intends to keep a stock of preparations made up from the prescriptions of a neighbouring doctor. No medical man of any position would grudge the Dentist the privilege of prescribing a tonic or a purge to a patient under treatment of the teeth. What difference is there between the administration of little quinine internally or carbolic acid locally if the actions of both are known? A conscientious Dentist will study the effects of a dose of quinine, gelseminum, chlorate of potash, or calomel as carefully as in applying the hot iron to detect a living pulp, the slight percussion for periostitis, or the character of pain showing a suppurating pulp. The lectures attended on materia medica at a general hospital, if not sufficient for our requirements, should be supplemented by a course at the Dental hospitals.

We cannot depreciate the L.D.S. degree if honestly obtained after six years' study, for in doing so it appears like a man who has had the honour of knighthood conferred on him with the distinct understanding that he is never to use the title. The value of the one is the practical use that can be made of it by the education received to obtain it, and the other by the privilege to add the distinction to the name.

It is true that by the existing charters only those persons whose names appear on the Medical Register or roll of the Apothecaries' Company are legally entitled to prescribe or perform surgical operations: but that must not be our guidance for the future. Sooner or later a Dental Surgeon must be allowed to do both, to do justice to his patients and to claim the title of a profession. If not, the L.D.S. will be considered a farce, and all teeth which have exposed nerves must necessarily be consigned to the forceps. The idea that a Dentist can always obtain sufficient work by filling ordinary cavities and extracting teeth is not enough to justify the assertion, no more than a man can be called a distinguished surgeon if he never attends to other than midwifery cases. We have no wish to usurp the surgeon's place, and if the L.D.S. degree is not sufficient to entitle a man to do the things we have suggested, let another take its place.

Manipulative Miscellany.

All instruments or articles wished to be described under this heading are requested to be sent *for inspection* to the publisher not later than the 8th and 23rd of each month, they can be returned in a few days. Where, from the size or otherwise, this is impracticable, a clear and minute description will be sufficient; the sole object being to give practitioners a description of everything new, on its own merits, and without any intention or wish to pit one against another. All makers, vendors, and inventors, are invited, with strict impartiality, to contribute towards this end.

IRIDIUM PLATINUM NERVE-BROACHES.

Mr. G. W. RUTTERFORD has received a consignment of these new nerve-broaches, which promise to be exceedingly useful in being able to resist wear. The special advantage over the ordinary steel barbed nerve extractors is that they do not corrode with iodine, dampness, or acids, and they are easily cleaned by being held in the flame of a spirit lamp. It is the common experience of all that the steel extractors are useless after being used for the first time, owing first to the injury they receive during use, and secondly, the inability to clean them without removing the barbs.

These instruments are mounted in nickel-plated handles, two inches long, and are manufactured by the S. S. White Dental Manufacturing Company.

NEW AMALGAM FILLING.

THE Dental Manufacturing Company have been appointed sole agents for Dr. Gregory's metallic filling, which he has used for the last fifteen years. Stoppings are those productions which we find it difficult to form an opinion upon, and therefore can only give notice of their introduction until time has elapsed in a case under observation to prove their merits. In the manufacture of amalgams three things are sought after: no shrinkage, hardness, and a good colour. We very carefully mixed up some of this stopping according

to Fletcher's differential balance, and obtained an amalgam which packed exceedingly well, and in seven minutes was sufficiently hard to receive a fine burnish. Out of the mouth it appears a clean compact substance, and as such we can conscientiously recommend our readers to give it a trial.

WHITING'S FLEXIBLE ATMOSPHERIC SUCTION DISCS FOR UPPER AND LOWER DENTURES.

A FEW weeks ago Mr. J. Hinds, of Coventry, sent us some of these discs and one or two dummy pieces showing their adaptation, and we have reserved our criticism until we had mounted one or two and seen them in action. Everyone who has used india-rubber suction discs of any maker know that they perish in the mouth, and when decomposed are useless. There has always been a difficulty in replacing them if so destroyed. Mr. Whiting has stepped in with a method in which the discs can be renewed, even by the patient. To mount one on a denture a circular cavity must be made, which, if in a gold plate, must be struck up, if in a vulcanite obtained by packing it on a pewter disc, and above this, appearing through the palate—if in an upper case—is a circular metal pan with a large hole in it. By this we find, by turning the gum surface of the case towards us, a circular cavity with a hole in the centre, one fifth its diameter; and, on turning to the lingual side, we find the metal pan with the hole leading to the other side. Now, it only remains for a special disc, which is made of the india rubber used for vela, to be applied.

This disc consists of a larger and smaller plate joined in the centre by a pedicle; the larger, which occupies the cavity on the gum surface of the denture, is flat, with a slightly raised ridge on its upper margin; the smaller is thick and convex, and if pushed through the hole described will occupy the pan.

Those for the lower dentures are similar, only are oval, and the smaller plate is pressed into a circular box instead of a pan. The metal parts are made of gold and platina.

Where we have applied them they have answered all expectations and may be used with confidence in those cases where suction is not obtained by a good fit.

A NEW EXPANDER.

MR. L. ROBERTSON, of Cheltenham, has made a valuable modification of the Jack screw. In his invention a continuous spring does the work of the screw, giving a decidedly less disagreeable sensation to the wearer.

It consists of two movable heads which are screwed on to a central spindle, which is further divided in two parts, the one stationary, the other sliding up and down a hollow case. The movable part is subject to the pressure of a spiral spring. To apply it without a case it is necessary to draw in the movable spindle by means of a little knob and with binding wire fit it to the stationary spindle to which is attached another knob. The heads are now removed and tied to the teeth by means of fine wire or silk to be followed by the central spindles being screwed into them. That being done the wire which caused the spring to be compressed is cut and the force is applied. When the teeth have been pushed to the limit of the spring the heads may be unscrewed, which will extend the length; three sizes are supplied so that there will be no difficulty in obtaining the necessary extension.

To apply it with a case insert the heads in the vulcanite and have the plate cut in half so that when the central spindle works it moves the whole sides asunder. In that way the entire dental arch may be expanded, whereas for single teeth the case is not needed. Messrs. Ash and Sons are making them in dental alloy with their accustomed care, and their obvious usefulness needs no further recommendation.

IN our notice of the New Gas Stove introduced by the Dental Manufacturing Company in our issue of October 16th we mentioned a fault which it possessed, namely, that when

the lid was put over quickly the gas went out. The inventor has written us requesting us to state that where there is only a small pressure of gas and the little side shutter is left open this will happen but not otherwise. As our remarks might have prejudiced its value we take an early opportunity of making this correction.

A CORRESPONDENT to the 'Lancet' gives high testimony to the advantage celluloid possesses in the manufacture of the tracheotomy tubes by Messrs. Maw and Thomson over india rubber. The case to which he applied it with so much success was that of a malignant tumour which necessitated the operation of tracheotomy, and whereas the india rubber one became bent the celluloid stood. It was moreover moulded to the patient's throat by being immersed in hot water. The dental engine is becoming as great a favourite with the surgeon when he has to remove hard exostoses as with the Dentist, and now we find celluloid being used by them with favour.

WE have received a furnace from Thos. Fletcher, of Warrington, but must reserve our notice of it until our next issue.

Literary Notices and Selections.

ON THE PRESENCE OF BILE IN THE SALIVA.

DR. SAMUEL FENWICK read a paper before the Royal Medical and Chirurgical Society of London on the "Presence of Bile in the Saliva, and on the variations in the amount of Sulphocyanide of Potassium in the Saliva of persons affected with different diseases." The author commenced by stating that it is generally believed that in cases of jaundice the saliva does not contain any of the colouring matter of the

bile. He has, however, found a yellow colouring matter in the saliva of every case he has examined, after evaporating it by means of a gentle heat. A bitter taste is often complained of by patients affected with jaundice, and it has been suggested that it might result from the presence of the biliary acids in the saliva. The author has not been able to prove whether this opinion is correct or not, but he details a case in which an intense bitterness was complained of by a person unaffected with jaundice, in whose saliva he found traces of the biliary salts by the ordinary tests. Having proved that both the colouring matter and the salts of the bile occasionally presented themselves in the saliva, an attempt was made to ascertain whether the amount of the sulphocyanide of potassium usually present in the saliva varies in different diseases, and whether such variations coexist with any particular diseases. For this purpose, the saliva was examined in a large number of patients treated in private and hospital practice, and the results were afterwards analysed. As it had been stated by some physiologists that the sulphocyanide was only the result of decomposition set up in the saliva by decayed teeth, and by others that it was produced by tobacco-smoking, these two conjectures were first examined. The state of the teeth was carefully remarked in eighty-seven hospital patients, and it was found that there was no relation between the amount of decay in them and the quantity of the sulphocyanide in their saliva. The habits of 213 persons were inquired into respecting their use of tobacco, and it was found that the amount of the sulphocyanide was not affected by the habit of smoking. The quantity of sulphocyanide was almost always deficient in cases of jaundice arising from obstruction; thus, of twenty-three cases, it was very deficient in eighteen, and in some scarcely a trace could be found. From this the author conjectures that the amount of this salt in the saliva depends on the quantity of the bile that reaches the intestines, a conclusion that seemed to be supported by two cases of hepatic fistula, in both of which it was also very deficient. Where jaundice was absent, one of the chief circumstances that appeared to regulate the amount of the sulphocyanide was the quantity of food taken

by the patient ; thus, it was always deficient in œsophageal stricture, and in cancer of the stomach. Persistent vomiting, diarrhœa, and dysentery produced a similar result, probably by removing the food before it could be fully digested. It was also deficient in cases of severe atonic dyspepsia, and in all cases of chronic disease where the appetite was very bad. The sulphocyanide was found to be in excess in fat persons and in those who were gaining flesh ; deficient in those who were thin or rapidly losing weight. It was greatly in excess in all cases of acute rheumatism (thirty-six cases examined), and reached the maximum in the second week of the disease. It was also in excess in all the cases of acute gout, and in most of the persons liable to what are termed “ bilious headaches.” In the early stages of all inflammatory disorders there was an excess ; for instance, in gastric catarrh, in acute pleurisy, erysipelas, diseased kidneys, and in phthisis ; but it sunk below the average in the latter stages of these diseases. The author points out that the fibrin of the blood has been found to be in excess in most of the above diseases, such as acute rheumatism, gout, erysipelas, and acute inflammations, and he suggests that an unusual amount of sulphocyanide in the saliva is perhaps the consequence of an excessive excretion of unoxidised sulphur, resulting from the large amount of albuminous material of the blood that has been altered by the inflammatory process, and thereby rendered unfit for organisation into healthy tissue.

Dr. MARCET said little was known of the sulphocyanides in the saliva. They were only known by their chemical reaction, and had never been isolated. This, however, was useless for clinical purposes, where the colour-tests must suffice. Dr. Fenwick’s observations were numerous and reliable. Sulphocyanide seemed to have some relation to digestion, though what that was no one seemed to know ; perhaps it also partook of the nature of an excretion.

Dr. FENWICK said the quantity of sulphocyanide in the saliva was so small that colour-tests could alone be used. It was only by collecting a great number of cases that any light could be thrown on the subject.—*Medical Times and Gazette.*

THE EFFECT OF BLEEDING ON INFLAMMATION.

THE effect of local abstraction of blood in relieving local inflammation is one of the ancient doctrines of therapeutics which is still unrefuted and still unexplained. It was formerly held that the result was produced by a perfectly simple *modus operandi*. By the removal of blood from the surface the vessels of the deeper inflamed parts were partly emptied; but it was later recognised that this explanation is incompatible with the known conditions of the circulation. The local removal of blood never produces a lasting effect on the circulation in the part. At the present time it is generally assumed that the effect of local depletion is to remove the inflammatory stasis, although such an effect has never been demonstrated experimentally; and, moreover, the idea of a derivatory action still haunts the theory of the subject, while the effect is sometimes ascribed to the influence of the depletion on the whole mass of blood. The question has been lately subjected to experimental investigation by Genzmer and Nikolas, of Halle, and the results obtained have been described by the former in the 'Centralblatt für Med. Wiss.' In the web of the foot of curarized frogs, foci of inflammation were excited by punctiform cauterization either by nitrate of silver or a red hot needle; and the process was watched with the microscope. When well-known phenomena of inflammation made their appearance, the aggregation and exit of the white corpuscles, retardation of the blood current, and, finally the formation of stasis, a leech was applied to the leg. As soon as the leech began to suck, a striking change occurred in the inflammatory process in the foot; the blood current became quickened, and carried on the corpuscles which were adherent to the wall, the stasis passed away, and in a few minutes the inflamed capillaries were cleared, and presented to the end of the experiment a normal and even accelerated circulation. Whether the corpuscles which had already wandered out of the vessels were influenced by the abstraction of blood could not be with cer-

tainty determined. In some experiments scarification was employed after the focus of inflammation had been excited. The effect was less conspicuous, since the loss of blood did not occur with the same vehemence as with a leech, although the amount of blood abstracted was nearly the same. The effect of abstraction of blood from the general circulation, by opening an abdominal vein, was still slighter, although the amount of blood taken was considerable. The conclusion drawn from these experiments is that the antiphlogistic action of local abstraction of blood is produced by a purely mechanical agency. A temporary augmentation of the circulation occurs, by which the capillaries are cleared, and the stasis, which is the first step in local necrosis, is removed. Not only is no local anæmia produced, but there is actually an arterial hyperæmia; there is an increased supply of arterial blood to the focus of inflammation, which, besides its effect on the blood-vessels, may reasonably be supposed to improve the nutrition of the tissues, and so to counteract the tendencies of inflammation. The antiphlogistic action is clearly proportioned both to the amount of blood withdrawn and to the rapidity of its withdrawal, and its action is notably greater if the blood can be withdrawn from the circulation between the region of the inflammation and the right side of the heart.—*Lancet*.

CRURAL NEURALGIA AMONG DENTISTS.

DR. J. B. SUTTON makes the following curious observation in the '*Lancet*.'

On June 20th I was called to a gentleman said to be suffering severely from sciatica. The patient was resting on his right side, complaining of intense pain in the left loin, radiating thence along the outer and anterior aspect of the left thigh whenever he attempted to move. Firm pressure applied between tuberosity of ischium and great trochanter of femur was painless, but the instant one touched the skin

immediately over the erector spinæ muscle severe pain was evoked, extending down the thigh to the knee-joint, mapping out exactly the course of the anterior, crural, and external cutaneous nerves. Pressure over the points of exit of the second, third, and fourth lumbar nerves from the spinal canal caused excessive pain. The nerves at fault were clearly the second, third, and fourth lumbar, the hyperæsthetic area in the loin clearly corresponding to the distribution of the posterior divisions of these nerve trunks. The case was obviously not one of sciatica, but crural neuralgia, having a very unusual distribution; the ordinary forms of this disease extend to the foot and toes of the affected leg. Belladonna and aconite were applied locally, strychnia internally; the patient was convalescent in seven days.

Two days later a similar case came under my notice, and a third had been reported to me with exactly similar symptoms. Curiously enough, the three patients were Dentists, engaged in the active duties of their profession. It appears exceedingly probable that this painful affection may be explained by the fact that when Dentists operate they always stand at the right side of the patient, consequently, when manipulating cavities in teeth difficult of access it is necessary to throw themselves into a constrained attitude, whereby the lumbar vertebræ are slightly flexed anteriorly, but flexed laterally to a considerable degree. It is necessary, sometimes, to maintain this cramped position for long periods, the temporary distortion being even more exaggerated when the dental engine is being used. These combined flexions cause the lumbar nerves to become congested, irritated, and possibly injuriously nipped as they pass through the intervertebral foramina, thus giving rise to the symptoms detailed above.—*Southern Dental Journal*.

A DENTISTS BILL FOR VICTORIA.

A BILL for the regulation of the practice of Dentistry in Victoria has been introduced into the colonial legislature.

Like the British Act it is based upon the reservation of the title of "Dentist" to registered persons; but although providing for the registration of persons who have practised Dentistry for three years continuously immediately before its passing, it contains no provision for the registration of those who have *bonâ fide* practised it "in conjunction with the practice of medicine, surgery and pharmacy," similar to that which was introduced into the British Act at the instance of the Council of the Pharmaceutical Society, and has been found so useful. The Victoria pharmacists are, however, alive to the importance of the omission.—*Pharmaceutical Journal*.

Dental News.

FATAL ACCIDENT THROUGH THE BURSTING OF A GAS-BOTTLE.

By ALFRED COLEMAN, F.R.C.S., L.R.C.P., and L.D.S. Eng.

THE circumstances attending this unfortunate occurrence having been so imperfectly, and in most cases so erroneously, reported, it is desirable that a correct account should be put into the hands of those who largely employ nitrous oxide in the compressed state.

On the 8th ult. a large iron bottle, which was constructed when full to hold forty-five gallons of gas compressed at a pressure of twenty-five atmospheres on the square inch at the ordinary temperature of the air, was sent by Messrs. G. Barth and Co. to Mr. Clarkson, optician, of Bartlett's Buildings, Holborn, to have the tap or valve repaired, the latter firm having for some time undertaken such work for the former. When received by Messrs. Barth the bottle, it was distinctly stated, was empty—the firm belief of the Dental practitioner who consigned it to them, and who had used it on several occasions.

The bottle was thus sent, presumed to be empty, but no

doubt still contained a considerable quantity of gas. The repair required was the insertion of a new tap, and this necessitated the unsoldering of the old one, the taps in these compressed gas bottles being soldered into the necks with soft solder, which melts at about 400° Fahr.

The mechanic to whom the job was entrusted, Antonio Mamini, aged twenty-three, proceeded to put the neck of the bottle into a forge, when he was warned by the boy who worked the bellows that he had not unscrewed the tap; he only shrugged his shoulders for reply, indicating no doubt his conviction that the screw was unturned and the bottle empty; as the tap had been broken this would no doubt have given him some extra trouble. The bottle being heated to the melting point of the solder, he was in the act of removing it from the forge to a vice, when it exploded with a loud report, inflicting upon him the most frightful injuries, as detailed below. The boy was also injured, but comparatively slightly, chiefly by dirt and dust being driven into his face and eyes. Another workman who was present believed he was struck in the back by a portion of the bottle, but it is more probable he only felt the concussion of the explosion and was horribly frightened.

Poor Mamini was at once conveyed to St. Bartholomew's Hospital, and I am indebted to the surgical registrar for the following account of his condition and injuries:

"Patient was brought to the surgery at 9.45 extremely collapsed, but quite conscious, answering all questions readily. Pulse very feeble. He remained on the stretcher in the surgery till 10.45; during that time he was covered with blankets, hot water tins placed at his feet, and brandy twice administered, with slight improvement in his condition. Brandy was not given a third time, owing to the extreme pain it caused.

"A rent in the middle of the greater curvature of stomach, measuring from two to three inches; from three to four inches of free border of liver were blown away. No other injuries to abdominal viscera.

"Shortly before 11 o'clock patient was placed upon the table in the operating theatre (without being moved from the

stretcher), and under ether Mr. Willett found his injuries to be the following :

“ A large rent in the right half of the abdominal wall, extending from the ribs to the crest of the ileum ; the flap was thrown back. Posterior third of crest of ileum detached and comminuted ; there were two large fragments of bone, one measuring one inch square and several smaller pieces, some of which were found in the back part of the abdominal cavity. Intestines protruded and fæces had escaped. Eight inches of transverse colon almost completely detached. Right arm almost severed at middle third, attached only by small portions of triceps muscle and skin ; humerus, vessels, and nerves completely divided.

“ *Operation.*—Intestines and stomach cleansed as far as possible. Mesentery ligatured where attached to semi-detached colon. Clamps put on both ends of colon left intact and eight inches removed. Lower and upper ends of colon left and stitched to edges of wound to form artificial anus. Hole in stomach was sewn up. Little or no hæmorrhage occurred during the operation. Patient died at 1 o'clock just after the abdominal wound had been closed, and before the arm could be touched.

“ Chloroformist states that when brought into the theatre patient was very pale, collapsed, almost pulseless, breathing well.

“ His pulse improved markedly under ether and a hypodermic of two drachms of the same. After being anæsthetised for an hour he gradually breathed slower and slower, and died just as the last suture was being put into the external wound. The abdominal wound was somewhat triangular, the apex pointing upwards.”

To the above may be added, that whilst he stated that he was in great pain, from his behaviour and the nature of his injuries, there is every reason to hope his pain bore no proportion to their extent, as is commonly the case where the nervous system has suffered so violent a shock. After such an accident as this it is easy to say that greater care should have been taken to see that the bottle was empty. As the bottle was returned without the ordinary label of

weight of bottle full and empty, weighing would have given no indication of the emptiness of the bottle or otherwise. And here it may be pointed out that for several reasons it is most desirable that practitioners should never remove the labels from the bottles, but return them with them on. In the case of bottles containing liquid gas, their emptiness may be determined by striking them with a piece of metal, an empty bottle yielding a different sound to one containing any quantity of gas, but this does not apply to simply compressed gas. Still, no doubt, in future every precaution against a similar catastrophe will be taken. As it is my intention to offer some remarks in the next issue upon compressed nitrous oxide, I will here only point out that the bottle which caused the accident was one for compressed gas and not one for liquid gas, and that, contrary to what might be expected, a far less safe arrangement than the latter, as I shall hope to show.

NATIONAL DENTAL HOSPITAL AND COLLEGE.

THE Annual Dinner of the Past and Present Students of the National Dental College was held on Thursday evening, November 23rd, the chair being taken by W. H. BROADBENT, Esq., M.D.

At the termination of the dinner the Chairman rose and said he had to ask them to drink to the health of their Gracious Sovereign the Queen, knowing full well that their enthusiasm went before his words, and that the only difficulty was to find fitting expression for their thoughts. They must admit that they had been singularly fortunate with regard to their Queen, knowing that during her reign almost every country in Europe had undergone revolutionary excitement, and more than half the monarchies had to take to flight at one time or another. The exalted station of Her Majesty had only served to show her love of mankind. The fierce light which beats upon her throne had only served to reflect her spotless character, and her influence had only been used for public good. (Hear, hear.)

Dr. STRONG proposed the toast of "The Consulting and Medical Staff." Having referred to the members of the

consulting staff, Dr. Strong said that, coming nearer home, he would note those gentlemen who composed the medical staff of the institution. As they all knew, these should be gentlemen of the highest order, and the list of names before him guaranteed that they were. To those who were present he could not but tell them how he remembered the sayings which fell from the lips of his teachers, and he was sure that those young men now around would, in after-life, look back to that medical staff as those to whom they owed their success in life. (Cheers.) Therefore, it was with much pleasure that he proposed the toast of "The Consulting and Medical Staff," associating with it the name of Mr. Harry Rose, who was one of their teachers.

Mr. HARRY ROSE, in responding, remarked that Dr. Strong had said so many flattering things about the Consulting and Medical Staff that it was scarcely needful for him to now occupy the attention of the company. But he was quite sure that they all endeavoured to do their duty, and that during the twelve or thirteen years of his association with the institution he could safely say that throughout that time some one had been interested in it, namely, the students who had flocked thither in greater and greater numbers; therefore, it only remained for him to thank Dr. Strong for associating his name with the toast, and also to thank those present for the manner in which they had received it. (Cheers.)

The CHAIRMAN rose to give the toast of "The National Dental Hospital and College," and said that he must claim for the toast which he was about to propose the honour of being the toast of the evening. He had to propose "The Prosperity of the National Dental Hospital and College"—(cheers)—and he did so with great personal pleasure, knowing that it would be received by them with enthusiasm. He would say that the prosperity of the College was guaranteed when they saw such attachment to the institution as was shown by such a meeting of those present before him that evening. (Cheers.) He thought that was one of the strongest signs of vitality. He was sure that there was a great future for the hospital, and that it was astonishing the amount of work which was done, not in quantity but in quality; and that it was a source of great gratification to see the resources of Dental Surgery placed at the disposal of the poor of London, they not coming simply to have their teeth removed, but to have benefits of conservative Dentistry applied to their necessities. They all knew that there was nothing so deservedly costly as the skill of those trained specialists who gave their services to the National Dental Hospital.

(Cheers.) To the college he was sure that there was also a great future, there being nothing more remarkable than the high position which Dental Surgery had taken. They all knew that the object was the relief of human suffering, and that it was that which dignified any calling. In order that any profession should take its proper position before the public, in order that due privileges should be accorded to those who carry on that profession, it was necessary that some organisation should be formed to secure that result. In was only in 1837 the Royal College of Surgeons was called into existence by Royal Charter, and already they had formed a special branch of surgery. (Cheers.) Referring to the institution, the Chairman said that the founding of the hospital was a most patriotic work, and he believed that the founder was present before them. (Cheers.) He thought that the name of the founder would be handed down in connection with the hospital, which would be a very important institution of the metropolis. He knew that they were all proud of their hospital and school, and that he felt very proud in having been called upon to propose the prosperity of the National Dental Hospital and College. No name was placed in connection with that toast, but he was quite sure they had a right to name the present representative, the Dean, Mr. Gaddes. (Loud cheers.)

Mr. GADDES thought it was unfair to call upon him, it having been carefully designed that the Dean should not take any part in the speeches; therefore he had been enjoying his dinner, feeling wholly freed from the grave responsibility of having to speak. But, having been called upon, he thought it his duty to respond. He felt very much obliged to Dr. Broadbent for mentioning his name in connection with the toast, and also to the gentlemen present for their very warm acknowledgment of him. Upon the spur of the moment he thought the best thing that he could do would be to give them some account of what they had been doing during the past year. Since the month of May they had had an entry of five full students and eight partial ones, making a total of thirteen new entries during the past six months. That fact showed that there was enough teaching for the staff to do, but being one of the teachers himself he must refrain from saying anything about their virtues or their shortcomings. He must remark, however, that all the students of the College that had been sent up to the Royal College of Surgeons of England has been successful in their examinations. (Cheers.) They had not had one failure, which was something to be able to say. (Hear, hear.) Mr. Gaddes thought that that fact was sufficient to

show the nature of the teaching imparted by the staff of the National Dental Hospital and College. It was a matter of great satisfaction to the staff, and to the numerous students who met together year after year, to have such an opportunity as the present for meeting one another—workers, teachers, and fellow-students. They had present that evening gentlemen from great distances; one from Rouen, another from Liverpool, another from Macclesfield, another from Weymouth—in fact, from all ends of the earth;—(cheers)—therefore he was quite sure that such a gathering as the annual dinner of the past and present students and friends was a matter of gratification to every one present. Before sitting down, he had to thank them, not only for the kind manner in which his name was received, but especially for the cordial help which had been given to him, as their Dean, by the staff, and also by those with whom he was so much associated, namely, the students of the National Dental Hospital and College. (Loud cheers.)

Mr. RYMER next proposed the health of "The Past and Present Students," and remarked that the toast which he had the honour and pleasure of proposing, followed naturally upon the one which preceded it, they knowing that the hospital and college would be nothing without students; the institution had been a babe, but a very robust one, certainly not born with a silver spoon in its mouth, it having had rough work to do. He had watched the progress of it from the first, and had marked the happy progress of the students past and present, and he would make bold to say that a more gentlemanly and attentive company of students than at present there could not be, and that many of their past ones had attained positions of honour. The best thing the present ones could do was to follow the example of those who had so worthily gone before, and then they would be as shining lights to the profession, and an honour to their country. Mr. Rymer said that twenty-five years ago there were no such educational advantages as those which the present students are now reaping the benefit of. At the Medical Congress they saw that Dental Surgery was made a special branch of surgery, and that of the papers read he thought there was not one of more practical importance than that by their friend, Mr. Gaddes—(cheers)—which was on the immensely important subject of providing assistance to old soldiers and sailors when suffering from dental diseases; therefore, it was with very much pleasure that he proposed the toast of the "Past and Present Students," associating the names of Mr. Morgan Hughes and Mr. Charles Rose.

Mr. HUGHES, in responding, said that it was an extremely difficult thing for one who had only lately qualified to speak as a past student, when there were present so many past students who had done good work since they left the hospital; therefore, he felt scarcely qualified to reply to the toast, especially after the manner in which Mr. Rymer has spoken of the services which the past students have done already. But he was sure he was only expressing the feelings of the past students when he remarked that all those students looked back with the greatest [pleasure at the time spent at the National Dental Hospital. With reference to their success at the examinations spoken of by Mr. Gaddes, he felt sure that it was greatly owing to the exertions of that gentleman—(cheers)—and that their success was not limited to the English examinations, but it extended to the Irish and the Scotch. Mr. Hughes concluded by thanking the gentlemen present for the manner in which they had received his name.

Mr. CHAS. ROSE replied to this toast as a present student, remarking that, as he was elected to respond, he could scarcely say which of his feelings was uppermost, whether it was his chagrin at having to do it, or the great pleasure he felt in having gained the confidence of his fellow-students. (Cheers.) He said Mr. Hughes had mentioned Mr. Gaddes' name, and that he would, on behalf of his fellow-students, tend his humblest thanks to Mr. Gaddes and others for the untiring energy and zeal which they had displayed in giving them a practical knowledge of the details of their profession, and, with Mr. Gaddes at the head of affairs, he thought that they could only show the self-confidence they had in the view of success. With regard to the work they did it was not for him to speak, but he was sure that they did good work—at any rate, they were not ashamed of it. (Cheers.)

Mr. OAKLEY COLES rose to the toast of "The Visitors and Dental Schools," and said that, unaccustomed as he was to public speaking, he felt a natural diffidence in appearing before them; but in accordance with that power which had controlled the affairs of that evening, he rose to propose the above toast. If they would allow him he would be somewhat specific, and mention, in connection with the visitors, the name of Mr. J. S. Turner—(cheers)—and, with reference to the Dental schools, he would mention the National Dental Hospital and College, the London School of Dental Surgery, the Edinburgh School of Dental Surgery, the Glasgow, Liverpool, Birmingham, and the Plymouth Schools, this making up a very fair array of Dental institutions. Mr. Coles said

that before Dental schools existed they had had Dental literature, and he thought he was right in saying that there was no other speciality which could claim two thousand years of literature in the same way as Dental science could. From the time of ancient Greece down to the present there had not been a single century which had not contributed to Dental literature; century by century they had gone on accumulating. Mr. O. Coles thought that a general impression prevailed that Dentistry was a modern production, or a modern institution; but that he begged to say that ancient Rome knew something of deformities arising from the teeth, there having been found an old leaden pair of forceps in a temple at Rome, which showed that Dentistry had grown to a high state of skill, representing that teeth should not be removed before they were loose enough for the leaden forceps to extract them. In investigating that subject he was surprised to find that in the fifteenth or sixteenth centuries there were from forty to sixty theses written on Dental Surgery in different parts of Germany; therefore, there was for two thousand years a recognition of this as a department of general medicine. This was the prelude to more important manifestations which had developed in the form of Dental schools. These they could scarcely claim to have founded in the world, as Dental schools were first established in America. Be that as it may, it was like twins, it was only a little in advance to be first. The Metropolitan School of Dental Science was the first institution of the kind in the United Kingdom. (Cheers.) Since that time Dental Surgery had made tremendous progress; it had been reduced to the legitimate object of conservative Dental Surgery. The literature which had led them on to the organisation of the profession in the form of Dental schools had also led to the formation of the British Dental Association, and thus to the good of the whole Dental society—that being, he said, like a trades union, involving not merely discipline but self-sacrifice and the sinking of individuality. Mr. Coles said that there was present with them one who had shown that spirit of self-sacrifice for the great good, namely, the Secretary of the British Dental Association—Mr. J. Smith Turner. (Cheers.) He hoped he had not omitted the mention of any Dental school, but he was quite sure that through the medium of that higher intelligence, that of the press, that they would convey the sentiments and the sympathy which had been accorded on that occasion.

Mr. J. SMITH TURNER, in reply, said he remembered reading, a long time ago, a little book on the plurality of worlds, but he thought that the doctrine of plurality was

dying out. Knowing the difficulty there has been to eradicate evils from our social affairs, legislation has at different times been brought to bear upon them. The plurality of wives was almost extinct in Europe; it, having gone from the East to the far West, settling down in the Salt Lakes, was now engaging the attention of American legislators. These few remarks of his were put forward to show the difficulty there was to stamp out evils that found their way into the social fabric. He thought that he was standing in a position of representing a plurality of responsibility (not in a ritualistic point of view), and as he had never known of such a circumstance, he could only put it down to the peculiar leaning their profession had to amalgam. That responsibility had made him feel like Will Waddle, who was like two single gentlemen rolled into one. After some further observations, Mr. Turner thanked them, on behalf of the visitors, for their generous hospitality. Referring to the Dental schools, Mr. Turner said Mr. Rymer had spoken of twenty-five years ago. That reminded him of the greatest meeting which had ever taken place, and which was summoned by Mr. Rymer—(cheers)—and that is why, in his modesty, he does not like to hear it mentioned. But since that time their course had been exceedingly rapid, and he could well remember when Mr. Rymer tried to stir up a little enthusiasm on the matter of Dental reform. Now they had got the Act of Parliament, and this was strangely interpreted by some, but it was not so bad after all. Referring to the number of schools, Mr. Turner said that there were so many now that when one close atmosphere did not suit the delicate student, he could go to the south or to other parts. Speaking of the National Dental Hospital, Mr. Turner said he had watched its progress with great interest, and that at one time in its history it was at a low ebb, but he strongly advised its being continued, and he thought that there had been no reasons for regret since. In conclusion, he thanked them all for the hearty way in which they had drank to the success of "The Dental Schools." Mr. Turner said that there was a great Society where they might all meet, and he would propose the health of the "Odontological Society," coupled with the name of the President, Mr. Rymer.

Mr. RYMER briefly replied, thanking them in the name of the Society, and trusted that every student present would, sooner or later, become a member of that Society.

Mr. WEISS said that he was called upon to propose the health of their Chairman. No meeting could be properly organised without a chairman, and he thought that the enjoyment of that evening depended greatly upon their dis-

tinguished President, Dr. Broadbent, a name which was well-known throughout civilised Europe. He was also one of the consulting staff, and, undoubtedly, he bore a strong affinity to them in all their prosperity. Whatever opinions might have existed in the past, they certainly must now acknowledge that the medical profession had been ready to meet them in any way to advance their interests. In conclusion, he said that there was scarcely any necessity to do more than simply propose the toast of "The Chairman," as he was so well-known; but they would wish him prosperity, and drink his health in a cordial spirit, which he so richly deserved.

The CHAIRMAN having responded, the enjoyment of the after part of the evening was enhanced by music and recitations.

SOCIETY OF LICENTIATES IN DENTAL SURGERY.

ANNUAL MEETING.

THE Annual Meeting of the above Society was held in Anderson's College, Glasgow, on the evening of Wednesday, 15th November, the President, J. R. Brownlie, Esq., in the chair. The minutes of last meeting having been read and approved of, James M. McCash, Esq., L.D.S. Glasgow, was admitted.

The SECRETARY then read the annual report, from which it appeared that a greater number of papers were read and discussed than during either of the two preceding sessions, viz. "Vulcanite and Celluloid," by Mr. James Cummings, senr.; "Old Instruments and New Ones," by Mr. J. Foulds; "Salivary Calculus," by Mr. John Melville; "Impression Compounds," by Mr. W. F. Martin; "Tooth Extraction," by Mr. W. H. Grey.

Many interesting cases and specimens were brought forward at the meetings. Amongst others, Mr. W. S. Woodburn showed a novel method of employing small inflated rubber bags for making good the deficiency in cases of cleft palate.

The meetings were well attended throughout; there were nine additions to the membership, and no withdrawals, during the season. The number on the roll now is twenty-seven.

The Treasurer's report was also highly satisfactory, the income from subscriptions having considerably increased,

and after meeting all charges leaving a considerable sum in the hands of the Treasurer.

The following office-bearers were then balloted for and duly elected :

President—Mr. J. S. Woodburn.

Vice-President—Mr. James Cummings, senr.

Secretary—Mr. Donald Cameron.

Treasurer—Mr. John Melville.

Curator and Librarian—Mr. A. B. Young.

Editor of Transactions—Mr. J. R. Brownlie.

Councillors—Mr. John Foulds, Mr. William H. Grey, Mr. William Lang, and Mr. Benjamin Sutherland.

The retiring President, Mr. Brownlie, then left the chair, and on taking his place as President Mr. Woodburn was most cordially received. Mr. MELVILLE then proposed a vote of thanks to the ex-President for his unwearied efforts on behalf of the Society, which was heartily responded to, and Mr. BROWNIE briefly replied.

Amongst the cases of interest there was shown and presented to the museum two plates of tartar which had formed adhering to the buccal surface of the second upper molar of each side of the same mouth. Somewhat circular in form, and exceedingly hard, about one inch and a half in greatest diameter, and three eighths of an inch thick at the thickest part, their removal had the effect of altering considerably the contour of the patient's face.

It was proposed to make the next meeting special, and in connection with the annual dinner, for the sake of those members not residing in Glasgow or neighbourhood, and a committee was appointed to carry out this idea if possible.

With the usual vote of thanks to the Chairman the proceedings terminated.

EDINBURGH DENTAL HOSPITAL AND SCHOOL.

THE above school opened on the 1st of November with an addition of six Dental students. During the past year three of the students at this school completed their studies and obtained the diploma of the Royal College of Surgeons of Edinburgh. One student permanently retired through ill health. In addition to the Dental students six medical students have taken advantage of a "three months' instruction," which it is hoped will stand them in good stead in

the Colonial and Missionary Field. Altogether the progress which the Edinburgh School is making is indicative of good teaching.

Tabulated Statement.

Number on Roll at Nov. 1st, 1881	11
Completed Course and Passed Examination ... 3 }	4
Retired..... 1 }	—
Number of old Students	7
New Entrants	6
Total Number on Roll at November 1st, 1882.....	13
Medical Students for Partial Course—completed ...	6.

W. BOWMAN MACLEOD, *Dean.*

ASHENHURST FUND.

Per Mr. H. Cecil Riches (Cardiff), 10/6.

Per G. Weaver, Esq. : G. Weaver, Esq., 10/6 ; Mr. E. Wilmot (Assist.), 1/-.

Per C. Sims, Esq. (Birmingham) : Mr. Huxley, 5/- ; Mr. Cave, 5/- ; Mr. Batchelor, 5/- ; Mr. C. Sims, 5/- ; Mr. J. O. C. Philips, 5/- ; Mr. Roberts, 5/- ; Mr. Adams Parker, 5/- ; Mr. S., 2/6 ; Mr. A. B., 2/6 ; Mr. M., 1/- ; Mr. P., 1/- ; Mr. Mallin, 1/- ; Mr. White, 1/- ; Mr. Cregea, 1/- ; Mr. R., -/6 ; Box, 1/-.

Per Messrs. Ash and Sons : E. B. (Brazil). £2 2s. ; Mr F. W. C., 5/-.

Per the Dental Manufacturing Company : Dr. Elliott, £1 ; Mr. W. Campbell, 10/- ; Mr. C. Smith, 5/- ; Mr. S. G. Y., 5/- ; Mr. W. H. B. N., 5/- ; A Friend, 3/- ; Mr. H. S., 2/6 ; Mr. R., 2/-.

Further subscriptions will be received by Messrs. C. Ash and Sons, the Dental Manufacturing Company, Mr. Rutherford, Messrs. W. and J. Jamieson, and the Editor of this Journal.

APPOINTMENT.

MR. W. G. GORDON JONES, L.D.S. Irel., has been appointed Honorary Dental Surgeon to the Princess Mary Village Homes.

To Correspondents.

1. Communications intended for insertion in the ensuing number must be forwarded to the Editor, at the Offices, 82, Mortimer Street, Regent Street, London, W., by the 8th and 23rd of the month, and must be duly authenticated by the name and address of the writer.
2. We cannot undertake to return communications unless the necessary postage stamps are forwarded.
3. It is earnestly requested of our correspondents that their communications be written on one side of the sheet only; and we also beg to call particular attention to the importance of a carefully-penned signature and address.
4. All communications relative to subscriptions and advertisements are to be addressed to the Publisher, Mr. J. P. Segg, 82, Mortimer Street, Regent Street, London, W.
5. The Journal will be supplied direct from the office on PREPAYMENT of subscriptions as under:

Twelve Months (post free) 14s. 0d.

Post-office Orders to be made payable at the Langham Place Hotel Office, to G. E. Skliros, 82, Mortimer Street, Regent Street, W. A single number sent on receipt of seven (penny) stamps.

ANSWERS TO CORRESPONDENTS.

In the list of names of those gentlemen who obtained the L.D.S. Eng. at the recent Examination the name of Jester appears, it should have read Tester.

Communications have been received from Messrs. Mathew Lieming (Manchester), Oakley Coles (London), Alfred Coleman (London), J. S. Amoores (Edinburgh), P. Langmore (London), David Taylor (Glasgow), Wm. Stuart (London), W. G. Gordon Jones (Brixton), F. J. Hinds (Coventry), Ash & Sons (London), J. R. Brownlie (Glasgow), A. Helyar (Yeovil), Dental Manufacturing Co. (London), F. Henri Weiss (London), National Dental Hospital (London), H. L. Albert (London), Thos. Fletcher (Warrington), Thomas Gaddes (London), Rutterford, Caulk (Delaware, U.S.A.), Gilbert Walker (London), W. J. Milles, Esq. (London).

BOOKS AND PAPERS RECEIVED.

'Transactions of the Odonto-Chirurgical Society.' 'Etiology of Dental Caries.' 'Wakefield and West Riding Herald.' 'Fletcher's Catalogues.' 'Journal of the British Dental Association.' 'L'Odontologie.' 'Ohio State Journal.' 'De Progres Dentaire.' 'American Journal of Dental Science.' 'Pharmaceutical Journal.' 'Lancet.' 'Medical Times and Gazette.' 'British Medical Journal.' 'Chemist and Druggist.' 'New England Journal of Dentistry.' 'Cosmos.' 'Nervous Force,' W. C. Barrett, M.D., D.D.S.

NOTICE.—We desire that it may be clearly understood that our pages are open to all for free expression of their views on matters connected with our profession. We only ask for terseness of expression and MODERATION IN TONE.

When otherwise unobjectionable, difference of political or other opinion will never be regarded by the Editor as a disqualification for the admission of any communication to the pages of the **BRITISH JOURNAL OF DENTAL SCIENCE.**

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REMARKS ON COMPRESSED NITROUS OXIDE GAS.

By ALFRED COLEMAN, L.R.C.P., F.R.C.S., L.D.S., &c.

NITROUS OXIDE was first liquefied by Faraday, who employed the following method. Some nitrate of ammonia was placed at one end of a strong glass tube, bent near its centre at an angle, and then the other end was hermetically sealed. The end containing the salt was exposed to heat, and the gas thus generated exerted so prodigious a pressure that it became liquefied in the other extremity, which was kept cool. The pressure was ascertained to be 50 atmospheres = 750 lbs. on the square inch at 45° Fahr. The experiment was a very dangerous one, and the experimenter ran considerable risk, even though his face was protected with a wire mask and his hands with thick gloves.

Faraday afterwards accomplished the same object by direct pressure. He employed two condensing syringes fixed to a table, the first having a piston of an inch in diameter, and the second a piston of only half an inch in diameter, and these were so associated by a connecting pipe that the first pump forced the gas into and through the valves of the second, and then the second could be employed to throw forward this gas, already condensed, to ten or twenty atmospheres into its final recipient, the condensing tube, at a much higher pressure.* This is much the same process as is now adopted for liquefying the gas, and the apparatus as employed by Messrs. Coxeter was exhibited at the interesting lecture delivered by Mr. Braine before the Odontological Society, May 6th, 1872. According to a well-known law gases expand in a certain proportion for each increment of heat, but what this is for nitrous oxide has not been very accurately determined. According to Roscoe and Schorlemmer,† the pressure necessary for the liquefaction of

* 'Elements of Chemistry.' By Thomas Graham, F.R.S. Vol. i, p. 71.

† 'Treatise on Chemistry,' vol. i, p. 417.

nitrous oxide is 30 atmospheres (450 lbs.) on the square inch at 0° Cent.; consequently, as the pressure required for the same at 45° Fahr. is, according to Faraday, 50 atmospheres, this would give 20 atmospheres for 13° Fahr., or over $1\frac{1}{2}$ atmospheres to each degree Fahr. Messrs. Barth and Co. inform me that they calculate an increase of 100 lbs. pressure for each 10° Fahr., or 10 lbs. ($\frac{2}{3}$ atmosphere) for each degree Fahr., or rather more than 1 atmosphere for each degree Cent., and this again corresponds more closely with Faraday's table for carbonic acid; thus at 0° Fahr. the tension of that gas is 22.84 atmospheres, and at 32° Fahr. it is 38.50 atmospheres, or about 12 atmospheres for 18° Cent.; nitrous oxide being less compressible would show a higher rate, and it is, I think, probable that Roscoe and Schorlemmer mean 30 atmospheres at 0° Fahr. about -18° Cent., and not at 0° Cent. The matter is one of interest, and could be readily worked out by those who liquefy nitrous oxide on a large scale.

The bottles constructed for containing the liquid nitrous oxide, at least those supplied by the Messrs. Barth and Messrs. Coxeter,* are, I am informed, tested by the maker up to a pressure of 4400 lbs. to the square inch; they could probably resist a much greater strain, but for all practical purposes we must reckon their resistance at that. At a temperature of about 50° Fahr. Messrs. Barth and Co. found that directly some of the gas became liquefied a pressure-gauge indicated 900 lbs. on the square inch, but this pressure was not increased when the vessel was completely filled, and which would be conformable with known laws.

In calculating the increased pressure for increased temperature we may, I think, fairly take the simple calculation of Messrs. Barth & Co., viz. 10 lbs. for each degree Fahr., and starting with Faraday's statement that liquid gas exerts a pressure of 50'' atmosphere = 750 lbs. at 45° Fahr., we should, if the gas were raised to 212° Fahr., the boiling point of water, have a pressure on the bottles of 2420 lbs. to the square inch, thus leaving in the bottle still one half of its capacity of resisting power. This calculation, if it be correct,

* I have recently seen some bottles, not supplied by the above firms, which, in addition to having flat bottoms instead of dome-shaped ones—an element of weakness—have apparently no neck welded into the upper end of the bottle into which the valves are screwed, as in the bottles supplied by the above-named firms, but the valves have the appearance of being soldered into a hole made in the flat top of the bottle; or if screwed at all it must be into only a comparatively thin surface of metal, and the valves would be liable to break off from a heavy blow or fall, and, perhaps, with very disastrous consequences.

is very assuring, as it shows that gas bottles must be perfectly safe for all other than extraordinary temperatures.

In the case of the bottles employed for the compressed—not liquefied—gas the conditions are very different. The bottle which caused the melancholy accident detailed in the last number was a large iron bottle calculated to hold forty-five gallons of gas compressed at 25 atmospheres = 375 lbs. on the square inch. Now the contents of such a bottle, which is tested to only 1000 lbs. to the square inch, would if heated up to the boiling point of water exert a pressure of probably over 1000 lbs. on the square inch, and if so, would undoubtedly burst. Had the bottle been one for liquid gas it is more than probable that it would have attained the melting point of the solder without bursting. There can be no doubt, but that the bottles for compressed gas should be at once and for ever discarded; they might even burst if left in the rays of a tropical sun.

Still, assuring though the calculations may be regarding the safety of the bottles for liquid gas, there are nevertheless still questions of some moment to those who habitually employ them. The first may be, does the liquid gas in any manner act upon the iron of the bottles? We should apprehend it would not, and I am informed that it has no corrosive action upon them whatever. In the second place, it may be asked are the bottles re-tested on each occasion of their being refilled, and can we rely on their retaining the original pressure test? When liquid nitrous oxide was first introduced, I insisted on our having some guarantee of the resisting power of each bottle when sent out full of gas. I urged the matter strongly on the attention of the Odontological Society, and was, I recollect, considered fussy—disagreeably so—in the matter. To the Messrs Coxeter I suggested that each bottle before being sent out should when filled be immersed for some time in boiling water; they expressed their willingness to adopt this test, if desired, but pointed out the undesirableness of continually exposing the bottles to a severe strain as likely to weaken them. I think, however, we might ask that each bottle before being refilled should be tested by hydraulic pressure, a process far less likely to injure them than an elastic pressure, and very easily carried out to say 3000 on the square inch.

But the most important question to my mind is what would be the condition of an operating room, for instance, containing gas bottles if it took fire; who would dare enter such a room to extinguish the flames, and if they did what frightful risk would they not run? That gas bottles have survived such a catastrophe is no argument that they should

always do so. To obviate this danger I have suggested, and the idea has occurred to others, that each bottle should have a small hole drilled from its exterior near the bottom diagonally upwards into its interior, and that this should be filled up with a metal melting at or below 400° Fahr.; from its direction the pressure would be exerted on it to only the smallest degree, whilst in the case of a fire the bottle would discharge itself with, at all events, the minimum of dangerous effects, a little hot spelter being scattered about.

OCULO-DENTAL DISEASES, OR MALADIES OF THE EYE CAUSED BY DENTAL IRRITATION.

By Dr. GALEZOWSKI, M.D., Paris.

THERE are two classes of affections of the eye which are produced under the influence of an irritation of the dental nerves: these are:—1. The maladies consecutive to the three physiological periods of dentition; and 2. The maladies of the eye which result from dental caries.

Oculo-dental maladies consecutive to dentition—First dentition.—Every one knows that in children the most critical age is that which corresponds to the first dentition. We see, indeed, in these little beings an extraordinary effort effected during the first two or three years of their existence. The permanent irritation of all the dental nerves must naturally be transmitted to the other branches of the fifth pair, and occasion, now in one now in another of its extremities, a like perturbation. This irritation of the dental nerves is easily explained by the retraction of the alveolar orifices, and the difficulty the teeth encounter in piercing, and it is transmitted by the nervous branches to the eye, to give rise to keratitis or phlyctenular conjunctivitis, and abscesses of the cornea, &c. Very often, indeed, are we consulted for children of from one to three years, attacked by abscess of the cornea more or less grave, and which returns every two or three months without a well-defined cause. We see the malady get worse, the suppuration extends to the deep layers, and leads to more or less deep interstitial infiltrations. These accidents recur frequently and are generally attributed by all doctors to a constitutional cause (lymphatic or scrofulous). But if we carefully note

the epoch in which these children suffer in their eyes, we are easily convinced that there is an intimate relation between the dental evolution and the inflammatory attacks of the cornea. We see very often the keratitis get better and enter on the period of reparation, when a new crisis arises, without our being able to find any cause whatsoever. A new tooth begins to free itself from the dental alveolus, and this physiological effort betrays itself by an irritation of the dental nerves, and consecutively by a reflex action of the ciliary nerves.

Second dentition.—One knows that the milk teeth, as they are called, fall at a given period, and are replaced by the permanent teeth. Generally this second dentition commences about the age of six to seven years. But this physiological process is not produced in all the teeth at the same time, some appearing early, whilst others are later. This is the order in which they come: the first large molars from six to eight years; the incisors from seven to nine years; the bicuspidis from eight to ten; the canines from nine to twelve years. We see then from this table that the second dentition lasts on an average eight years, and it is sufficient that this effort should be a little more difficult than usual to give rise to a certain irritation of the dental nerves, which may be transmitted by a reflex action to the nerves of the eye.

Different maladies may arise in the eye under the influence of this prolonged dentition, either simple inflammation of the external membranes of the eye or others constituting general troubles of nutrition in one or other of the membranes.

We meet in the second period of dentition with three varieties of ocular alterations: *a*, suppurative keratitis; *b*, interstitial keratitis; and *c*, spasms of the lids.

a. Suppurative keratitis presents no peculiar symptoms, but is very obstinate and often resists for months all treatment.

b. Interstitial keratitis is one of the affections of second dentition. It appears habitually in lymphatic and strumous persons, it often also finds a favorable site for its evolution in weak, anæmic, and extremely nervous subjects; but the principal cause of the malady is defective dentition, and not hereditary syphilis or scrofula, as English authors have tried to prove.

c. It is during this period that symptoms of *spasmodic contractions* of the lids and face often appear, sometimes true choreic contractions and even convulsive attacks. To facilitate the fall of the old teeth, which are already

loosened at their base, and to aid by all possible means the evolution of the new ones, such are the indications to fulfil, allaying thus, as soon as may be, the irritation, at the same time arresting the malady of the cornea.

Third dentition.—There exists a third period of dentition, which includes the appearance of the wisdom teeth. We know that one finds in adults thirty-two teeth, up to the age of twenty years, that at this epoch the four last begin to appear, which we call wisdom teeth, and that this period is prolonged from four to five years. This late dentition is almost always very painful, it is accompanied by dental neuralgias, often very intense, and which are transmitted to the ophthalmic branches. Hence, inflammations of the cornea and of the iris. Certain forms of suppurative and recurrent keratitis which are observed in this period must be attributed to this late dentition, which we can very well call the *third dentition*. I have seen lymphatic and nervous patients attacked by interstitial keratitis at the period of the eruption of the wisdom teeth, especially when this was difficult and attended by pain persisting for months.

Such are the alterations of the eye which can be developed in the course of the three periods or epochs of dentition. We clearly understand then, that to cure any malady of the cornea or iris, developed under the influence of irregular and painful dentition, it is not sufficient to attend to the local affection of the eye only, but that it is necessary to endeavour to allay the dental irritation by taking out carious milk teeth, and by lancing the gums deeply on the parts where the teeth will pierce.

(To be continued.)

THE TREATMENT OF CLEFT PALATE.

By CHRISTOPHER HEATH, F.R.C.S.,

HOLME PROFESSOR OF CLINICAL SURGERY IN UNIVERSITY COLLEGE, LONDON.

(Concluded from page 1135.)

The closure of the soft palate is then proceeded with, fine silver wire being used, with horsehair or silk for the uvula. Mr. Smith employs a sharply curved tubular needle for the wire, which is carried on a wheel in the handle of the instrument, and can be projected when the point has traversed both sides of the palate. A twister is employed to twist the wire

up, but the last two turns are more conveniently given at the conclusion of the operation with a pair of torsion-forceps. The horsehair is softened in warm water, and is introduced with a small curved or rectangular needle set in a handle, being passed through both sides of the palate, and caught with a "catcher" or forceps. The horsehair is simply tied with three knots, so as not to slip.

Should there be a fissure of the hard palate, the operator proceeds to detach the muco-periosteum by a modification of Langenbeck's urano-plastic method. Making a puncture near the alveolus, he introduces a palate raspatory of small size, and brings the point out in the fissure. Then, meeting this with a strong aneurysm-needle, he replaces the raspatory with the needle, withdrawing the former altogether, and working with the needle from the fissure towards the alveolus. In this way, aided, if necessary, by the leverage of strong curved scissors, the muco-periosteum of the hard palate is sufficiently detached, the hæmorrhage, if troublesome, being controlled from time to time by a small sponge pressed against the palate. With the curved scissors, the soft palate is then detached from the bone of the hard, one blade being passed beneath the muco-periosteum, and the other above the soft palate, so as to divide the tissues transversely close to the horizontal plate of the palate-bone.

The muco-periosteal flaps of the hard palate are now closed by a sufficient number of fine wire sutures; and, lastly, an incision, as recommended by Dieffenbach, is made on each side of the soft palate, so as to thoroughly loosen it, and take all tension off the stitches, which are then finally adjusted with torsion-forceps.

In this operation, no formal division of the levator palati muscles, as recommended by Sir W. Fergusson, is undertaken; but it is probable that the lateral incisions in the soft palate divide, to a great extent, the insertions of the levators, while the detachment of the soft from the osseous hard palate must necessarily divide the insertion of the tensors of the palate.

Many operators, myself among them, have found that they have obtained good union of the soft palate without even lateral incisions; but when the tension is great these should not be omitted; and in cases of great muscular irritability of the palate the systematic division of the levators may be undertaken with advantage. Whether the division is performed, as recommended by Sir W. Fergusson, with a lancet-shaped blade set at right angles to the shaft of the knife, and introduced above the soft palate, or with a straight knife thrust through the palate, as proposed by Mr. Pollock, the

division should be performed after the introduction of the stitches, which both serve to render the muscles tense, and also are more readily introduced before the hæmorrhage, sometimes severe, caused by the myotomy, obscures the view.

The material for, and the method of introducing, the stitches vary in the hands of different surgeons. Sir W. Fergusson preferred purse-silk, and employed the method devised by Mr. Avery for introducing it, as follows. An ordinary palate-needle carrying the silk was passed from before backwards through the margin of the soft palate, and the loop caught with forceps and drawn out of the fissure. This being repeated on the opposite side, one silk was looped through the other and drawn by this means across the fissure and through both sides of the palate. In tying the silk it is convenient to use a sliding knot—*i. e.* one end is simply knotted firmly upon the other, when, by pulling the silk, the knot is slid up to the palate, and will keep its place while a second knot is made over it.

In the after-treatment of a case of operation for cleft palate, it is essential that plenty of liquid nourishment should be given in the first day or two, and be followed up by semi-solid food, so that the patient's strength may be well supported, and the process of healing accelerated. The idea that any effort at swallowing, even of the saliva, must necessarily tear upon the wound, was shown, by Sir William Fergusson, to be fallacious; and the practice of starving the patient, first decried by Sir Philip Crampton, is now universally abandoned. Talking should be forbidden for the first few days; and it is undesirable that the patient should be exposed to any chance of taking cold by exposure to draught or east wind.

The time for removing the stitches after an operation for cleft palate has been greatly modified of late years, and it has come to be thought by the most experienced operators that the longer they are left the better. In most cases, silk or horsehair sutures should be removed in from ten days to a fortnight; but fine wire sutures may be left for weeks, or even months, so long as they do not scratch the tongue.

In order to improve the voice in cases of successful staphyloraphy in which the nasal tone persists, Mr. Francis Mason has proposed to divide the united soft palate on each side by a vertical incision, so that the soft palate may be loosened and made more flexible. The results are, however, disappointing, as the cicatrisation which necessarily ensues leaves the parts much *in statu quo antea*.

M. Passavant, with the same object in view, has proposed

to make a transverse incision in the soft palate, which can then be drawn forward and reversed. A portion of the mucous membrane of the upper surface is then dissected off, and a corresponding portion of the mucous membrane of the pharynx, and the two raw surfaces are brought together with a few sutures. As M. Sédillot remarks, however, it is difficult to understand how the two surfaces can be brought into contact; and the experience of all surgeons goes to show that permanent separation of the posterior nares and pharynx by cicatricial tissue is certain to produce nasal intonation.

In describing the operation usually performed by Mr. T. Smith, it will be noticed that the entire fissure in both hard and soft palates is closed by the same operation. This practice is not followed by some surgeons, who content themselves with closing the soft palate first, hoping thus to influence the approximation of the two halves of the hard palate, or, in cases too wide for closure, to employ an artificial palate. It seems to me, however, that it is very undesirable to close the soft palate when the hard palate cannot be closed, for in these severe cases the soft palate is both small and short, and the results, therefore, as regards the voice, are most unsatisfactory, even after the gap in the hard palate has been filled artificially. Again, if the patient is to be subjected to the inconvenience of wearing an artificial palate at all, he may as well be fitted with one to fill up the whole cleft, and thus improve the voice, which will be impossible if the scanty soft palate has been united.

The late Dr. Mason Warren, of Boston, was one of the pioneers in closing fissures of the hard palate by dissecting down a flap of mucous membrane, and his success was such as to encourage other surgeons to imitate his practice. He worked from the margin of the cleft, using sharp knives set at a right angle to detach the periosteum, which was then united with sutures. Mr. Avery was the first to follow his example in England.

In 1862 Langenbeck published his experience of operating from the alveolus towards the margin of the cleft, and laid especial stress upon detaching the periosteum by means of blunt raspatories to form part of the thickness of the flap. Having performed this operation on several occasions with good success, I can speak well of it, notwithstanding the incision near the alveolus, which may, if carried too far back, give rise to troublesome hæmorrhage. Two instances, in which nearly fatal hæmorrhage occurred from the posterior palatine artery, have been recorded by Mr. Howard Marsh, in both of which the hæmorrhage was successfully arrested

by plugging the palatine canal with a wooden plug pushed through the palate.

In 1874 Sir William Fergusson brought forward what was then believed to be a new proposal, but was afterwards shown to be a revival of a suggestion of Diffenbach's, viz. to detach the bony edge of the hard palate with a chisel, and to push the two portions of the hard palate towards the median line. In his early cases Fergusson used silk sutures, but in his later ones he found he gained sufficient approximation by stuffing the gap made on each side with lint. In this proceeding the damage done to the parts is considerable, and necrosis, with some exfoliation, is apt to follow. Mr. Mason has proposed to limit the action of the chisel by boring holes in the line of incision with a bradawl before the chisel is applied; but even with this modification the operation is one of limited application, which has not found favour with many surgeons.

Although the surgeon will not undertake to supply artificial aid himself in cases of deformity of the mouth, it is essential that he should be able to advise his patient in the matter, and possibly direct the Dentist or mechanic as to the method to be adopted. In Mr. James Salter's and Mr. Oakley Coles' works, there will be found complete historical accounts of the methods adopted by successive practitioners to obviate mechanically the deformities of the palate; but for surgical purposes it will be sufficient to say that, as regards congenital cleft palate, it is only during the last sixty years that anything like success has been attained. In 1820, M. De la Barre seems first to have employed "elastic gum" in making artificial palates, and in 1828 Mr. Snell made a palate of gold with a movable velum, which was subsequently improved by Stearn (1845), Sercombe (1857), and Parkinson (1867). All these palates acted simply as obturators, *i. e.* were placed below the palate, and overlapped the margins of the cleft, thus more or less completely shutting off the nose from the mouth. In 1864 Dr. Norman Kingsley, of New York, brought before the Odontological Society of Great Britain an artificial palate made entirely of vulcanised rubber, cast in moulds of metal taken from impressions in plaster of Paris. The velum of soft rubber (Figs. 3 and 4), had the great peculiarity that it fitted between the halves of the split palate and moved with them, at the same time filling up the gap between the palate and back of the pharynx. With this palate, adapted by Mr. Coles, I have seen very remarkable results; but the method has the drawback that, if applied to patients whose growth is not complete, frequent alterations are required, in addition to

the fact that the soft rubber wears out and requires renewal.

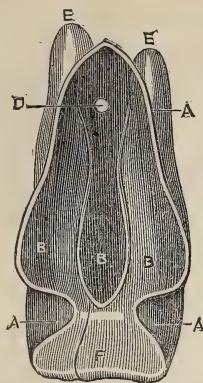


FIG. 3.

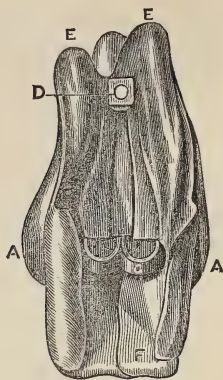


FIG. 4.

A palate on a totally different principle, contrived originally by Dr. Wilhelm Suersen, of Berlin, and lately brought to my notice by Mr. Oakley Coles, appears in many cases to afford the most satisfactory means of treating cases of wide congenital cleft of the palate. It consists entirely of hard rubber (Fig. 5), the posterior part being much thicker than the hard

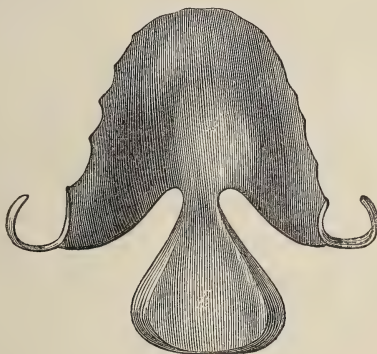


FIG. 5.

palate, to which it is attached by a narrow stem. The posterior part, which is triangular shape, is set at an angle so as to pass above the soft palate, and fill up the cavity of the pharynx, the edges of the soft palate coming in contact with it in deglutition and phonation. Mr. Coles has found that the tone of the voice is improved by substituting gold in the hard palate, and having induced a highly intelligent medical student to try one of these palates after having worn one of

Kingsley's, he informs me that he has no hesitation in giving the preference to the former, whilst I am able personally to testify to the improvement of his voice.

Whatever method of treating a congenital cleft palate may be adopted, the improvement in the voice must be gained to a great degree by education. A patient has in the first few years of life acquired vicious habits of speaking, and particularly a guttural and nasal tone, which requires great care to overcome. It is essential that he should be taught to speak with his lips, and to throw the voice forward, and with proper teaching and diligent practice he will in time speak as distinctly as the majority of healthy persons.

ANNOTATIONS ON ANÆSTHETICS.*

By SAMUEL OSBORN, F.R.C.S.,

ANÆSTHETIST TO ST. THOMAS'S HOSPITAL.

HAVING administered the anæsthetics at this hospital for some time, I have been asked to give my experience as to what I consider to be the best and safest mode of administration, and also to relate any interesting points which have been connected with that administration.

The three anæsthetics in general use are, nitrous oxide gas, ether, and chloroform, arranged in their order of strength, it being necessary to employ one or other according to the length or variety of operation, or age of patient.

Ethidene dichloride I have had no experience of. The variability of its composition is the great objection to its use, and it is on this account that I prefer to use ether.

Nitrous oxide gas is used principally for dental operations, where the extraction of teeth and such operations of short duration can be performed within a few minutes, for a prolonged use of this anæsthetic is dangerous, and therefore not applicable to any operation of magnitude, or rather of long duration, the two being almost identical.

As a rule, chloroform is administered to children under five years of age, and to adults above sixty; ether to all persons intermediate between those ages. The chief reason for which is this, that ether is given in all possible cases

* Reprinted from pamphlet, with author's notes of experience to present date.

because of its undoubted greater safety. Ether, moreover, causes an increase of the heart's action, whereas chloroform decreases the same.

Chloroform is administered to old people because the inhalation of ether produces hyperæmia of the bronchial passages to so great an extent that a fatal termination is not unfrequently the consequence. In children the same remark applies, but in reality they take any anæsthetic so remarkably well that either may be used without preference.

The process of anæsthesia may be divided in three stages, the first being that of cerebral excitement or loss of consciousness, the second accompanied by loss of sensibility, and the third by loss of motion. Beyond this it is not necessary to go, the final stage being one of total paralysis of all nerve centres. Generally speaking the second stage is sufficiently profound for most operations. Instances where the third stage is essentially necessary will be described under the heading of administration in special cases.

Preparation prior to the giving of anæsthetics may be divided into ordinary and special preparation.

In ordinary preparation no food should be partaken of for four hours previous to the giving of the anæsthetic, and the food then taken should be finely minced or in a liquid form, so that digestion may be thoroughly completed and the stomach empty. If this is not carried out more or less sickness is the consequence.

Patients prior to operation are in a high state of nervous excitement, and the function of digestion is consequently retarded, and so, by having the food minced, digestion is completed more rapidly.

Special preparation is called for in patients weakened by long suffering, such as those affected with cancer, long-standing cases of necrosis, and who may be characterised by the general term anæmic. These are the cases in which anæsthetics must be given with extreme caution, for from amongst these are usually to be found the fatal cases. A previous course of the most nutritious diet, accompanied by the administration of tonics, or, in other words, a feeding up prior to operation, must be resorted to.

In some patients where anæsthetics have been taken badly on a former occasion, small doses of ether and chloroform taken internally have been recommended with a view of getting the constitution accustomed to these drugs.

If chloroform is to be administered, brandy-and-water may be given beforehand, but no alcohol of any description should be given before the inhalation of ether.

In some cases it is found necessary to give an enema of

egg-and-brandy during the operation, for when the patient is under the influence of an anæsthetic, the passage of fluid by the mouth is attended with danger.

When it is necessary to have a patient insensible during an operation, *always have the anæsthetic given by some one who is in the constant habit of administering it, and who will attend to that solely.*

The patient, having been prepared, should be placed upon his back on the operating table, with the head slightly raised and all constriction by tight garments removed from the neck, chest, and abdomen. False teeth should be removed, and patients always asked prior to the commencement of administering the anæsthetic whether they have done so, as cases have occurred where, by some mishap, the teeth have become detached, and falling into the larynx occasioned fears of asphyxia.

The head of the patient should be kept on a level with the body or on a gradually inclined plane, not doubled forwards by too great a number of pillows under the head, for by so doing curves are made in the windpipe, but let the exit from the lungs to the mouth be in one straight line.

The warmth of the body should be kept up by being covered with a blanket, as in these days, when operations are mostly performed under the carbolic spray, the condensation of the steam occasions both damp and cold. Also the breathing of the patient should not be interfered with by the carbolic spray more than can be helped, the ether being already a sufficient impediment to the breathing.

When commencing any anæsthetic, the first inhalations should be freely diluted with air, and the patient gradually brought under the influence; for large quantities suddenly placed over the patient's mouth occasion gasping and struggling for breath.

When food is in the stomach patients are longer in getting under the influence of the anæsthetic, but as soon as vomiting has taken place they speedily become insensible. Sickness, in the true sense of the term, or the bringing up of the contents of the stomach, seldom occurs when patients have been properly prepared. In some cases, even when food is withheld as long as recommended, sickness occurs, on account of digestion not having taken place, this being due to nervous influence consequent upon the impending operation. Vomiting is more frequent after giving chloroform than after ether, its excessive sweetness being the cause. Ether in its evaporation produces much irritation of the buccal and bronchial glands, and consequently the secretion of the respiratory tract is largely increased, and flowing into the

stomach is sooner or later ejected, or, collecting at the back of the fauces, has to be removed. If the patient's head be inclined to one side, so that the saliva can partially run away by the angle of the mouth, this is lessened, for according to the amount of saliva swallowed will be the amount of frothy vomit to be afterwards ejected. Pallor of face frequently precedes vomiting, and may occasion some anxiety, the colour returning as the act of vomiting is consummated. The alternating contracting of the abdominal muscles is the principal sign of impending vomiting, and if the anæsthesia be slightly increased, this can be subdued.

To know when the patient is sufficiently under the influence of any anæsthetic for the operation to commence, the conjunctival surface should be touched with the tip of the finger, and if no reflex action takes place, shown by the contraction of the orbicularis palpebrarum muscle, a sufficient degree of insensibility has been produced. In certain cases, which will be subsequently mentioned, it is not necessary to have even so profound anæsthesia as the above. The corneal surface of conjunctiva is more sensitive than that covering the sclerotic; therefore, if the latter shows insensibility when touched the anæsthesia will be found sufficient for ordinary purposes; insensibility of the former being, of course, required for operations upon the eye itself. It must be borne in mind, however, that the conjunctival surface repeatedly touched by the finger eventually loses its sensibility. This fact must be borne in mind by the chloroformist, and first one eye and then the other be touched, or a false impression that the patient is thoroughly anæsthetised may be conveyed. Paralysis affecting one side of the body may also occasion loss of sensibility of one conjunctival surface.

Dilatation of the pupils is a sign of the anæsthetic having been pushed to a sufficient extent, and the inhaler should be immediately removed from the face.

Flaccidity of the limbs is no sign of cutaneous insensibility.

When the patient is fully under the influence of any anæsthetic he should not be moved about more than is possible.

The skin is undoubtedly the most sensitive part of the body, and much more so than the deeper structures or internal parts. The primary incision and the final passing of the sutures being more painful than the sawing of bone or handling of intestine, it behoves the anæsthetist to have complete anæsthesia at the two extremes of an operation. This deficiency of sensibility in handling intestine is fre-

quently noticeable in the operation of ovariectomy. An exception to this indifference of internal parts is seen in the washing out of the bladder after lithotomy or in the operation of lithotrity, both of which are extremely painful.

Protoxide of nitrogen, or nitrous oxide, or laughing gas (Messrs. C. Barth & Co.), is given by Clover's combined inhaler, which I shall later on speak of when describing the inhalation of ether. One minute is about the time occupied in producing insensibility with nitrous-oxide gas, or after three stertorous inspirations have taken place the patient will be found in a condition fit for operation.

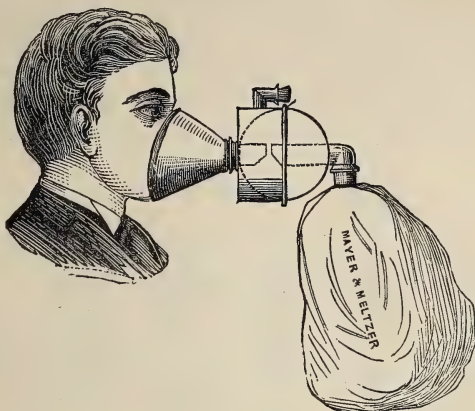
Nitrous-oxide gas produces great congestion of the vessels of the face and head generally, shown by the lividity of the countenance, and also occasionally causes bleeding from the nose or even hæmoptysis. Therefore, in a case of severe disease of the arterial system, such as being operated upon for ligature of a vessel for the cure of aneurism, I should not administer gas prior to the giving of ether.

Whether nitrous oxide gas should be given before the administration of ether is not a question of safety or of speed. As a matter of taste, or in highly excitable individuals, where in case of struggling assistance to restrain the patient would be necessary, nitrous oxide may first be given. It is almost tasteless and produces a quieting effect before the vapour of the ether becomes distinguishable.

Chloroform (prepared with methylated spirit, and manufactured by Messrs. Wright, Layman, and Umney) should be largely mixed with air, and for this reason it is best administered on a piece of lint folded into a cone to fit over the nose and month, whereby a free admixture of air is allowed. When, in January, 1876, I communicated to the 'Brit. Med. Journ.' the mode of administering chloroform at St. Thomas's Hospital, I then stated that Millikin's modification of Snow's inhaler was the one in general use. This inhaler I used for a long time and was well satisfied with it, but I consider the administration of chloroform on lint to be far safer, as a sponge holds too large a body of chloroform, and the quantity placed in the instrument must be accurately measured.

Ether is best given with Mr. Clover's portable regulating inhaler as manufactured by Messrs. Mayer and Meltzer, of 71, Great Portland Street. Having used this apparatus for some time I can confidently recommend it as being in my opinion by far the best, both as regards safety and comfort of the patient. It also consumes less ether. It is undoubtedly the least disagreeable to the patient, for any one having experienced a trial with this inhaler and another

has always given the preference to the one in question. The reason lies in the fact that the inhalation of their own expired air is gradually and imperceptibly changed to one heavily charged with ether, whereas other forms of apparatus



necessitate a large volume of ether to commence with, which, after having been poured upon the sponge, in its evaporation lessens in degree instead of increasing in force. The sensation of the inhalation of ether to many patients is that "of its running down their throats."

(To be continued.)

NEW METHOD OF PIVOTING TEETH.*

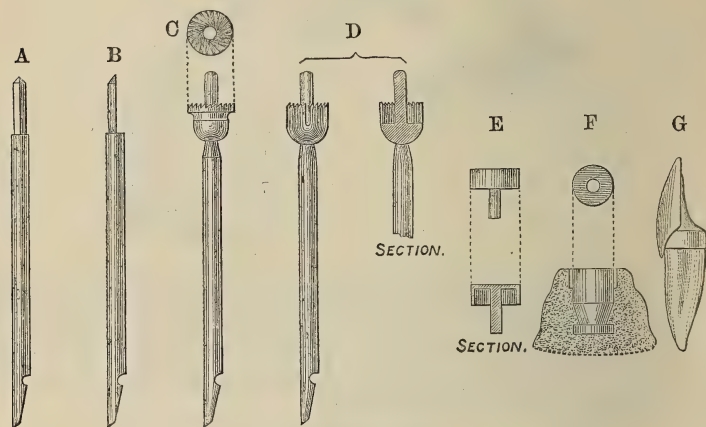
By Dr. BUTTNER, of New York.

By Dr. Buttner's method the art of pivoting can now be carried out with the greatest accuracy. It consists in the use of circular metallic caps of various sizes, upon which the mineral teeth are mounted, and the use of rotating instruments, which shape the roots so as exactly to fit these caps.

After the decayed crown of the tooth is cut off and the nerve destroyed, the nerve cavity is drilled out and enlarged by the instruments (A and B). Then the surface of the root is levelled to a right angle with the nerve cavity by means of the cutting or planing instrument (C) ; when this

* Instruments and appliances can be seen at Messrs. Ash and Sons, 8, Broad Street, Golden Square, London, W.C.

is done the outer part of the root is shaped to fit the circular cap of gold (E) by means of the cutting instrument (D). These gold or other metallic caps upon which the mineral teeth are mounted are numbered to correspond with the numbers on the cutting instruments, No. 1 being the largest and No. 7 the smallest, so that, for example, a gold cap marked No. 1 will fit exactly a root prepared by the instrument marked No. 1, and so on with all the numbers; each cap has a gold pin soldered in the centre, which exactly fits the hole in the root made by the drill (A).



After the root has been prepared to receive the gold cap, an exact impression of the mouth is taken, and in order to show the exact position of the root and the inclination of the hole drilled in the nerve cavity, one end of a piece of wire about three quarters of an inch long is put in the root, leaving the remainder to project; then an impression tray is taken having a space cut out in the bottom of it to allow the projecting part of the pin to pass through when taking the impression. That portion which will be found to be projecting in the impression will show the exact position of the hole in the nerve cavity in the root; upon this pin is placed a brass artificial root (F), which corresponds in number with that of the instrument used in shaping the root (the brass roots are reduced at one end so that they may be firmly held in the plaster). The plaster being poured into the impression will fix these pieces of brass in the exact position which the roots occupy in the mouth. Fig. F shows the brass root embedded in the plaster. Upon this brass root the metal cap is then placed, and the mineral tooth is mounted in the

usual manner, which when finished and placed in the mouth will be found to occupy its proper and exact position. Fig. G represents the natural root with the artificial crown upon it.

The set of pivoting instruments complete in case, consisting of two drills, two broaches, seven levelling instruments, seven shaping instruments, and seven pairs of artificial roots in brass, &c. The gold caps are made in seven sizes to fit the prepared roots.

SARCOMA OF LEFT SUPERIOR MAXILLA AND CHEEK —REMOVAL AND RECURRENCE.

Under the care of Mr. GEORGE LAWSON, F.R.C.S.,

SURGEON TO MIDDLESEX HOSPITAL, ETC.

ON June 12th, 1882, E. A—, æt. 18, a domestic servant, was admitted into Regent Ward for growth of upper jaw, with following history:

Christmas last she suffered with severe pain in region of molar teeth of upper jaw (left), extending over side of face; was told by medical attendant that it was due to cutting of wisdom teeth.

In the following January a swelling was first noticed in left cheek which rapidly increased, she therefore was admitted into St. Bartholomew's Hospital, Rochester, when an incision was made into left cheek and tumour was removed. The growth at that time was larger than at present.

Erysipelas followed the operation, but she made a good recovery.

Six weeks ago she first noticed swelling again in left cheek at site of operation, which increasing she applied for admission, and presented following conditions:

A fairly well-nourished young woman, complaining of pain and swelling of left cheek, which is much enlarged, and presents a cicatrix the result of previous operation. A hard lump is felt superficially about the size of a walnut, which is connected with a similar mass attached to left superior maxilla. The mouth can only be opened to a small extent; teeth are perfect in both jaws. The roof of hard palate on left side is seen to bulge into mouth, and there is some swelling about the alveolar process; left nostril is completely

blocked up. The left eye is pushed upwards and outwards, the sight of which is destroyed. There were no enlarged glands.

On June 14th, Mr. Lawson completely excised the left supra maxilla in the usual way, and also removed that portion of the growth which had invaded the cheek; actual cautery was then applied to the deep parts of the wound and to the cheek. Chloroform was administered but not to complete anæsthesia.

On examining growth it was found to be rather soft in consistence, of a pale, yellowish-white colour and encapsuled, and presented a lobulated cauliflower appearance.

Microscopically it was seen to be composed chiefly of small round cells, but in places there was a considerable growth of spindle-cells and fibrous tissue.

Patient rapidly recovered, on July 1st wound was healing well, on the 6th was quite healed externally.

On July 11th she complained of great pain in front of left external auditory meatus, where a swelling was found. The sight of left eye was completely destroyed.

On July 25th she was discharged, there appeared to be a recurrence of the growth in the cheek and also in the hollow left by the removal of the supra maxilla.

NOTES ON A CASE OF AN UNUSUAL TUMOUR OF THE CHEEK, SUCCESSFULLY REMOVED.

By EDWARD COTTERELL, M.R.C.S. Eng., L.R.C.P. Lond.,

ATKINSON-MORLEY SURGICAL SCHOLAR, UNIVERSITY COLLEGE, LONDON;

LATE HOUSE SURGEON, UNIVERSITY COLLEGE HOSPITAL, ETC.

THE following case, which lately occurred in my practice, is interesting to the Dental profession from its cause; it also claims the attention of surgeons, as it shows how very easy it is to remove similar growths without disfigurement and without any complications arising.

Miss H—, æt. 21, consulted me on October 27th, 1881, on account of a swelling on the left side of her face, which she had been suffering from for four years. She stated that she had been to two or three practitioners about it, one of whom told her that he would remove it for her, but that if he did so she would lose her life from hæmorrhage.

The patient was very anxious to get rid of the tumour,

which gave her the appearance of a chronic swollen face on the left side.

Upon examining her I found an elastic swelling could be made out occupying the left cheek and under the mucous membrane of the mouth, but not projecting inwards at all. Both the upper molar and second upper bicuspid teeth on the same side were decayed away, only the stumps being left.

I came to the conclusion that the swelling was due to glandular enlargement from the irritation of the stumps. However, before being convinced that my diagnosis was correct, I tapped the tumour from the interior of the mouth with a trocar and canula, but without any result.

I then recommended that the patient should have the stumps extracted, and wait for three months, in order to see if that had any effect in diminishing the size of the tumour. I confess that I had little faith that it would do so, but thought that the offending roots were best out of the way.

Accordingly, there being no qualified dentist in the town, the next day I administered chloroform and extracted the stumps.

The patient came to me the first week in January, viz. two months after the dental operation, and as there was no perceptible improvement in the size of the swelling, was very anxious to have it removed.

On January 15th, 1881, assisted by my brother, Mr. C. Vincent Cotterell, L.D.S., I administered chloroform, and having opened the mouth with a screw gag, made an incision about one inch long, parallel to Steno's duct, over the tumour. I came down upon a capsule, which I carefully avoided opening, and shelled out the tumour, which measured three inches by two inches, and one inch thick in the middle.

The operation was practically bloodless, not one drachm being lost, and in ten days the patient was perfectly recovered, the cheek being reduced to its normal size. The after treatment consisted merely of using plenty of Condy's fluid as a mouth-wash.

Upon examining the tumour after removal it was found to consist of a number of enlarged glands, the largest about the size of a walnut, and about half a dozen others about the size of a pea; these glands were all embedded in fat, which was perfectly encapsuled and lobulated, in this respect resembling an ordinary fatty tumour.

Bicester; Nov. 23rd, 1882.

DENTAL SURGERY A HUNDRED YEARS AGO.

By FELIX WEISS, L.D.S. Eng.

No better illustration of the progress made in Dental science of late years can be furnished than that afforded by a perusal of those works which, 100 years ago, were received as authorities on all matters connected with the teeth, and were also taken as guide-books for medical and surgical treatment. While the science of medicine had a foundation of established facts to guide its students, the grossest ignorance prevailed upon everything connected with the Dental organs; and the following extracts will prove how much we are indebted to John Hunter and those who followed in his footsteps for some of the primary truths upon which our science has had mainly to depend.

Mr. A. Tolver was a surgeon who, in the year 1752, published a treatise on the teeth; he also followed the avocation of a Dentist, if not with advantage to his patients at least with profit to himself.

Lockyer Davis, at Lord Bacon's Head, near Salisbury Court, Fleet Street, was a medical publisher, and in the year following, that is, in 1753, he took in hand Dr. Frederick Hoffman's 'Treatise on the Teeth, their Disorders and Cure.' The book had been originally written in Latin, and as Dr. Hoffman was "physician to his present Majesty the King of Prussia," we have every reason to believe that he was considered a responsible man. Both these books were published by Lockyer Davis, and as this printer had given to the world 'Hippocrates upon Air and Water,' and many other valuable medical works, both authors mentioned and publisher were supposed to be in the confidence of the public. Mr. Tolver's ideas on anatomy were, to say the least, peculiar, for he commences by telling his readers that "the number of teeth in a grown person are generally thirty-six, more or less according to age, constitution, &c. The great teeth in each jaw seldom appear until about the age of twenty-one and sometimes not till forty. The *canini* or dog teeth, which are two in each jaw, are so-called from their resemblance to the tusks of a dog; those of the upper jaw are by some called the eye-teeth from the communication of nerves betwixt them and the eyes." Dr. Hoffman, following Mr. Tolver, corrects him as to the size, figure, and number of the teeth, saying, that "they amount to thirty-two, sixteen in each jaw, though in

females they are oftener only fourteen;" and he enters into a speculation "whether the duration of life be determined from the number of the teeth," and also says that the extraction of eye-teeth causes a severe pain to the eyes, and thus its name. The same physician enters very learnedly into the order of dentition, and gives some original opinions upon the colour of teeth. "The whiter the better," he remarks, "their colour being a sure sign of their firmness. This colour also differs according to climates, the southern people having clearer teeth than the northern, while the Ethiopians and Egyptians surpass all other nations in this beauty, for which they are indebted to the clemency of the air and the salubrity of the Nile."

Of the diseases to which the teeth are subject neither of these authors have much to say. Tolver considering that "particles of air enter the pores of the enamel and may occasion a *tremor* in the tooth," but that the "external cause is tartar or turf of many different sorts accumulating on the surface of the teeth," produced mainly by intemperance or from eating sweetmeats or sugar, the gluey juice insinuating into the gums. But one of the most fruitful causes of caries or rottenness is thus alluded to by Dr. Hoffman. "When *worms* are engendered in a carious tooth, it is known by a gnawing pain with little or no saliva. A toothache proceeding from worms is of all others the most difficult to be cured; all the best specifics fail here, and the only recourse is in those things which are found most disagreeable and noxious to these tormenting animalcules." Fumigation is recommended to dislodge the worms and pills of aloes and myrrh. The learned court physician also remarks that "in a putrefied tooth is found a breed of worms hatched from eggs." He adds, "A professor of Leipsic told me some years ago that upon repairing a room in the Princes College, there was found in a rotten beam a worm of frightful figure and of such monstrous size that it was near half the length of the beam itself. My second observation is of a sound entire egg without any visible fissure, and vermilioned all over, which was laid all summer in a chest of linen. On opening the chest a swarm of small winged insects flew out, and upon the egg being broke swarms of animalcules were seen nestled in the white, for the yolk was entirely consumed. There being no part of the human body in which worms may not be engendered, I see no reason to oppose their breeding in the teeth. Worms have actually been taken out of decayed teeth, innumerable instances of which are recorded in medical treatises."

In Mr. Tolver's work, published one year before

Hoffman's, he remarks: "The vulgar, as well as certain authors, are of opinion that all pains of the teeth are caused by a worm that gnaws and eats the membranes and nerves of the teeth. This notion is founded upon pretended experiments on these insects which, by smoking henbane, will fall from the teeth; but whoever will be at the pains to make some trials with the microscope, may prove the absurdity of this notion." So much for Dr. Hoffman's reseaches.

Turning to the treatment of caries, Mr. Tolver strongly recommends the use of the file, the rugine, and the cautery, and the filling of the cavity with wax frequently renewed; and he speaks of most of the remedies, such as juice of sorrel and of lemons, the spirit of alum and salt of vitriol, as doing more harm than good, "eating little holes in the enamel of the teeth, notwithstanding that in these remedies consist all the secrets of the quacks." He recommends a piece of sponge dipped in warm water and soap, for cleaning the teeth, and before using the sponge, to scrape off the gluey substance which adheres to their surface with a quill; he then remarks: "'Tis become a great fashion with the English ladies, and with too many of my own sex, to have the teeth scaled; and this practice, shocking as it is, seems to be pursued with an uncommon attention. The design of this operation is to beautify the colour of the teeth by removing the tartar which adheres to their surface, and is done with iron instruments made for the purpose. 'Tis very probable," he continues, "that by endeavouring to detach this matter some of the enamelled part may be taken away with it, and as their metallic particles will insinuate themselves into the pores of the enamel, they never fail to produce great mischief?"

(To be continued.)

ON DENTAL FISTULA.*

By Dr. CHEVALIER CACCIAOUERRA, M.D., of Catania, Italy.

THROUGH the effect of caries, either in the second or third stage, in subjects affected by constitutional tendency, under the influence of occasional causes, inflammation of the dental pulp and periosteum often occurs, causing a swelling,

* Translated from the Italian by C. W. Dunn, L.D.S. Eng., of Florence.

accompanied by inflammation, extending to all the maxillary region, which may terminate either in absorption or suppuration; the anti-inflammatory treatment facilitates these two results. In absorption all is finished, whereas in suppuration, when every other inflammatory symptom has ceased, there often remains an alveolar abscess and fistula, produced sometimes by the purulent secretion of caries, sometimes by the introduction of air, which passing through the dental canals comes into contact with the periosteum and alveolar membrane. These becoming inflamed communicate the inflammation to the external tissue of the gums on the edge of the alveolar process, which is the point it generally selects; there may also be developed an irritation solely of the soft parts of the dental canals, with or without a slight inflammation on the edge of the external maxillary bone.

The abscess has almost the form of half a pea, and contains a secretion either watery, or of matter, or air or blood, according to the predominant tendency in the system of the patient. The spontaneous or artificial discharge of the contents causes pain to cease, and diminishes the partial inflammation (if such exists), both secondary symptoms depending on the caries, which with the gradual inflammatory process it generates, destroys the pulp and with it the abscess.

In order to cure this disease, and not wishing to extract the tooth, I made a transverse puncture, which, facilitating the discharge of the contents of the abscess, brought about diminution of volume during recovery, and little by little the cure; this happening after some time had passed, I was in doubt as to whether it was the effect of the treatment or simply the effect of the disease itself which had destroyed the dental pulp; nevertheless I used this method, as by it I obtained restriction of the disease until a complete cure was effected.

More than a year after the replanting of the first bicuspid on the left side of the upper jaw, contrary to the usual course, the dental fistula was not cured by the grafting, but only diminished in volume and in extent. Hoping for a cure with time, I allowed some months to pass, but the abscess was persistent, being kept up by the second bicuspid, which was also decayed, and which had been filled before the grafting of the first. Instead of making a second replantation I wished to try the effect of chromic acid.

With a straight pair of scissors I removed the projecting gum round the fistula, and there remained then exposed a wound of circular form, to which I applied chromic acid on

lint, leaving it for twenty-four hours; the next day I removed the dressing, and with it the crust. I then renewed the cauterisation, leaving the lint for an hour only on the wound. Similar treatment was repeated for three days, and I obtained the destruction of the base of the tissue which formed the abscess. I then left the last crust to fall off by itself, and in nine days the cure was complete.

Having succeeded in this first case, I wished to try it in others, where the tooth had not just before undergone the operation of grafting, and so to prove whether in all dental abscesses I could attain the same success, and I had seven other successful cases, in the course of which I found that if the inflammation around the wound had not entirely ceased, and although no secretion might be formed, the application of chromic acid ought to be renewed every day or two.

The result of this method is the total destruction of the dental abscess, leaving uncovered that portion of the root which sustained it. In some cases different degrees of sensitiveness when in contact with external agents remain, in others insensibility.

The circular border which surrounds the denuded part presents a healthy colour, which in progress of time gradually closes without producing any irritation, and for two reasons: the first, because after the total destruction of the tissues and of the periosteum of the root, a species of atrophy takes place in the denuded part, forming a layer of very fine dentine; secondly, because in the parts where the abscess was formed there are no longer any soft parts to become inflamed.

Reflections from the Surgery.

RESOLUTION OF ALVEOLAR ABSCESSSES INTO SEROUS CYSTS.

By WILLOUGHBY WEISS, L.D.S. Eng.,

DENTAL SURGEON TO THE WESTERN GENERAL DISPENSARY; ASSISTANT
DENTAL SURGEON TO THE NATIONAL DENTAL HOSPITAL.

E. P—, æt. 28, married, came to consult me, at the Western General Dispensary, respecting two swellings in the mouth.

The history she gave was that about three years ago she had an attack of erysipelas, and during the time suffered great pain with her teeth. She ultimately recovered from the erysipelas, but still continued to suffer with toothache; she did not, however, seek advice, and at the end of two or three weeks these swellings occurred, and had remained ever since. At this time she lost all pain, and had only suffered a very little since when the weather was damp, which caused the tumour to increase slightly in size. At the early part of the disorder she had noticed a very nasty taste in her mouth, but this for some months had almost entirely disappeared.

Upon examination I found one tumour about the size of a walnut situated on the left side of the superior maxilla, in the region of the first molar, the roots of this tooth being in the jaw (as indeed were the roots of all the molars), and somewhat loose. There was slight fluctuation, although not very marked, and no *craquement*. I removed the roots, expecting pus to flow from the opening, but instead, a clear thin glairy fluid escaped into the mouth, showing that the alveolar abscess, which it had undoubtedly been, had resolved into a serous cyst. The walls almost entirely collapsed, but I assisted the flow of the fluid by a little digital pressure and syringed the cavity out with very dilute sulphate of zinc. The second swelling was on the left side of the inferior maxilla, in the region of the first bicuspid, the root remaining in the head, and with all the conditions presented in the upper jaw. I at once removed this root and a clear thin glairy fluid escaped, as in the other tumour. I treated this in the same way, pressing in the walls and syringed the cavity out with very dilute sulphate of zinc.

I then directed the patient to see me at the end of a week. By this time the swelling in the lower bed had entirely disappeared, but a probe could be passed a short way down where the root had been removed; in the upper, the alveolus was at the anterior part still slightly distended. I crushed this in with the fingers, and told the patient to come again in a week's time. Everything was now in a normal condition, the swellings having entirely disappeared, the opening for the roots having almost entirely closed up by granulations, so I discharged the patient.

FRACTURE OF AN UPPER MOLAR CAUSED BY A FALL.

Case reported by C. VINCENT COTTERELL, L.D.S.,
DENTAL SURGEON TO ST. BARTHOLOMEW'S HOSPITAL, ROCHESTER.

COLONEL H. W—, of the Royal Engineers, whilst stationed at Chatham in 1852, thirty years ago, was attacked with acute periostitis in the upper wisdom tooth of the left side through cold, and attributing the pain to caries, consulted his friend, a medical man, who immediately extracted the tooth. As there was a total absence of caries, the inflammation was assigned to the rheumatic diathesis.

Ten years afterwards in attempting to mount a restive horse he vaulted over its back and fell heavily on the grass, striking his right shoulder and cheek. On regaining his feet he imagined he had dislocated his shoulder and broken his jaw, which happily the army surgeon assured him was not the case. Great difficulty was experienced for many days in opening the mouth owing to stiffness of the muscles, but beyond that no dental disturbance took place. About eight years elapsed, when a piece of bone worked out of the place where the wisdom tooth was extracted, which the army surgeon said was a piece of alveolus.

In 1881 he consulted me for advice respecting an offensive taste proceeding from the region of the second upper molar of the left side, and also produced the so-called piece of alveolus, which I found was the root of a tooth. After a careful examination with my probe I imagined I passed it into a cavity, situated on the distal surface and about the eighth of an inch above the neck of the tooth. As the tooth was loose, and the discharge caused the patient considerable annoyance, I extracted it, when I found the posterior buccal fang was missing, and when the root, which had worked out eight years previously, was put to the broken surface it articulated most perfectly, showing clearly that it belonged to the tooth just extracted. The discharge immediately ceased, which has led me to the conclusion that the tooth was broken by the fall, and the pulp had retained its vitality for some years, its decomposition taking place just prior to the appearance of the discharge.

British Journal of Dental Science.

LONDON, DECEMBER 15, 1882.

Two events, identical in their character, have taken place within the last fortnight, and they prove in no small degree the foundation upon which the Dental profession is resting. We refer to the annual dinners of the past and present students of the London and National Dental Hospitals. In these gatherings we have seen the general good feeling that prevails, which, when backed up with sound common sense, cannot fail to promote the greatest benefits, both to the profession and to the public. After-dinner speeches are regarded by some to be next to worthless, as they are credited with being constrained by etiquette, but these orations are the outcome of friendly intercourse, and when persons meet together for one common object something more than empty compliment is expected. We are not invited to a sumptuous repast free of cost, but are put to expense; we are not called upon to do special honour to any particular individual, but are expected to show that feeling towards our institutions which is dictated by personal impulses only. These invitations were responded to by over two hundred gentlemen, and it could not but excite a feeling of gratification in the minds of those well-tried elders of our speciality who were present. The speeches delivered on those occasions conveyed some idea of what had been achieved after twenty years incessant labour, but they also showed that an immense deal still remains to be done. A foundation has been made, and upon that foundation we sincerely hope the Dental constitution will be established. We say a foundation, for such it is, and it is likened to all original work, it will need extending and building up in the same way as the poem, the picture, or the symphony. Those who have had the opportunity of

examining the manuscripts of great works can see how each part has been altered until that perfection which has proved its greatness has been attained. We would not wish to harp on this subject in a weary monotonous strain, our objects are intelligible and may be summarised into three divisions, namely, our education, which fits us for the legitimate performance of Dental Surgery; the faithful carrying out of all its principles on the public; and the maintainance of a refined, gentlemanly bearing in all our dealings. These three things are all that are required of a professional man, and the promoters of Dental advancement have always held those principles paramount. When we review these questions we fail to see any unsurmountable difficulty in our way. Our schools offer every facility for Dental education, and when any one finds he is deficient in technical knowledge he will find also he can obtain special instruction extending from a few months to two years. Every year works appear which bring the subjects of our speciality more and more into an intelligible form. Instead of wading through huge volumes on surgery and medicine we have the different divisions carefully compiled by members of our own profession, so that after the usual general surgical education we can become thoroughly conversant with those cases which come under our individual care. There is nothing which the Dentist is called upon to do which will lead to the exhaustion of the supply. Dental caries is making its appearance in nearly every inhabitant of all civilised cities, in spite of our efforts to prevent it, so that as one generation passes away another brings its allotted tasks, and these are always enough to occupy our attention. With that knowledge there is no excuse for any one who does not honestly and thoroughly adopt all the principles of advanced Dental Surgery. Were our calling one that brought us constantly into contact with the artizan class, and we were obliged to associate with them, we might cultivate their coarse habits, and might readily be considered inferior in the social standard of society. Our practice, although differing in its details with the surgeon, is identical with regard to its performance. The Dental

chair and bedside offer the same scope for intelligent intercourse and humane treatment, remembering that fear and pain are the same whether excited from causes which bring the patient under the notice of the surgeon or Dentist. Legislative measures may do much to guard the public against inefficient operators, but it is the faithful performance of all works that will bestow the benefit of our education on the community at large. Let the public proclaim their appreciation of our services by acknowledging the success of our treatment, and let us in our turn endeavour by every effort to obtain that confidence which will establish the Dental profession second to none in honour and integrity.

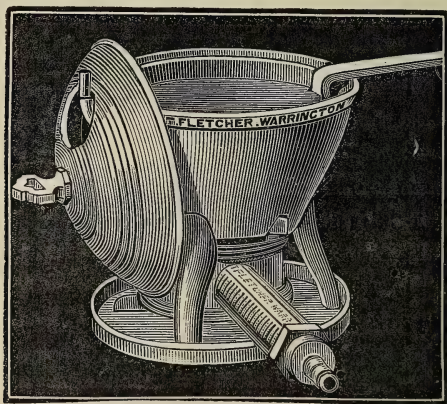
A very sad though novel cause of death has occurred within the last few weeks at the Middlesex Hospital. A gilder, aged sixty-five, was walking to his work in his usual health, when he was startled very much by the falling of a lamp-post. He continued his journey, when after accomplishing another mile he was seized with a sudden pain all over the chest, and immediately fell down in a fainting fit. A policeman who was passing finding him in this condition had him conveyed to the Middlesex Hospital, where he was placed under the care of Dr. Copeland, physician to that institution. A diagnosis of ruptured heart was made, but was not sustained, as under a stimulating treatment the patient recovered consciousness, and appeared to be fast throwing off what was thought to be nervous shock. The treatment was continued with some modification, when after forty-eight hours had passed after the fainting fit he suddenly become collapsed and died. The autopsy which followed showed that a rent half an inch long had been made in the left ventricle, from which blood had escaped, and forming a clot had sustained life, only to be followed by another hæmorrhage, which terminated fatally. This is another instance of what shock will do—the one of syncope following tooth extraction being fresh in our memory—and might act as a warning to Dentists not to deceive their elderly patients by doing anything painful without warning.

It is well known that in aged persons the muscles lose their elasticity and become atheromatous, and will not bear a sudden pressure which shock will involve, and the heart also being in a state of fatty degeneration, any great mental shock may lead to the serious consequences narrated above.

Manipulative Miscellany.

All instruments or articles wished to be described under this heading are requested to be sent *for inspection* to the publisher not later than the 8th and 23rd of each month, they can be returned in a few days. Where, from the size or otherwise, this is impracticable, a clear and minute description will be sufficient; the sole object being to give practitioners a description of everything new, on its own merits, and without any intention or wish to pit one against another. All makers, vendors, and inventors, are invited, with strict impartiality, to contribute towards this end.

FLETCHER'S NEW STOVE FOR THE LADLE.



WE have received one of these valuable stoves which, by its compactness, exceeds in usefulness all those inventions which Mr. Fletcher has introduced for melting zinc and lead. It consists of a circular cast-iron plate, with radiating lines, which receives one of his solid-flame burner stoves, and over this is placed a cauldron-shaped cast-iron jacket. The ladle being placed on it allows the heat of the flame to play round it, and with a lid which can be removed entirely the heat is economised in such a way that several pounds of metal may be reduced to a liquid state in a very few minutes. The lips of the jacket are received into grooves in the bottom plate, so that there is little fear of it being overturned. We think this will

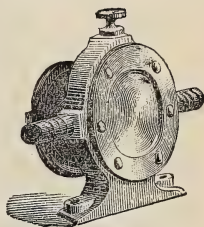
prove a great accessory to the workroom, owing to its solid, indestructible make.

BUTTNER'S NEW METHOD OF PIVOTING TEETH.

ON p. 1187 will be found a most interesting account of an entirely new method of pivoting teeth, to which we refer the reader. Messrs. Ash and Sons are the sole manufacturers of the metal parts, which vary in size and weight according to the requirements. They are also the proprietors of the instruments which were patented in June last.

IMPROVED WATER MOTOR FOR DENTAL ENGINE LATHE, &c.

THERE appears to be a smart contest between the various means for driving machinery, and it is difficult for one to decide which will prove the victor. Electricity is gaining ground each day as a motor power, and water slowly but surely is keeping well apace. Messrs. Ash & Sons have brought under our consideration an invention of no very great complexity to drive the dental engine or lathe by water and where, as they recommend, a pressure of 20 lbs. can be obtained, this little machine will continuously and silently convey motion to our dumb assistant, the dental engine.



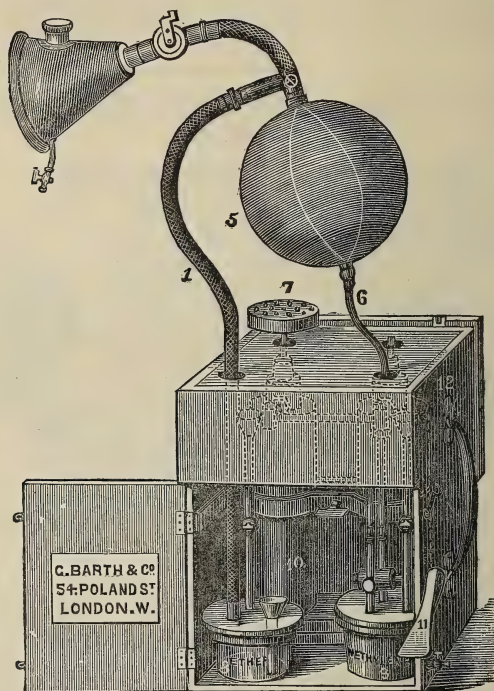
NEW POLISHING DISCS MOUNTED ON CLOTH OR CARDBOARD.

To facilitate the polishing of interstitial fillings these discs have been brought forward by the Dental Manufacturing Company, and they make another useful addition to the Dental cabinet. Unlike those most in use, they are made of waterproof cloth or cardboard, according to thickness, and possess considerable cutting power. Owing to one side being quite smooth, the operator is able to press the disc against the filling with the finger, and thereby prevents a square edge being left to the filling, which is a great advantage in some cases.

DR. R. T. FREEMAN'S COLLECTIVE APPARATUS FOR ADMINISTERING ANÆSTHETICS.

SINCE the former introductory notice of this ingenious combination, Mr. G. BARTH, Poland Street, the manufacturer, has made many improvements for simplicity. The apparatus is designed for short or long operations, contains two fifty-gallon bottles (10) of nitrous oxide gas in conjunction, so that the administrator need never find himself short of gas. The gas is turned on or off by the foot-plate (7), passes from the gas bottle to the duplex stopcock over the metal bottle (9), which is regulated by the foot-treadle (11); when the lever is up the gas simply passes through the tap and upwards again by the tube (6) to the receiving bag (5), and so to the

face-piece, but if it is desirable that any other anæsthetic should be used in combination with it, as ether, bichloride of methylene, chloroform, &c., which has previously been placed in the hermetically sealed bottle (9), a touch with the foot on the lever (11) diverts the gas to the bottom of the bottle (9), where it passes upwards *through* the second anæsthetic by the tube (6) as before, as a compound vapour for inhalation. Should it be required to continue anæsthesia by ether and air, ether or chloroform would have previously been put



into the bottle (8), which contains a sponge, and at the moment the gas or gas and ether is to be substituted by either, the anæsthetist would turn the two-way tap just above the receiving bag (5), closing the gas way and opening other tube (1). As the patient inhales he draws air through the air valve in the top of the bottle (8), which passes to the bottom of the bottle and upwards through the sponge before it reaches the face-piece. Ether or chloroform can be renewed in this bottle as often as requisite by the funnel attached for the purpose, and supplied with a tap to prevent ingress of air or evaporation of ether.

The whole of the adjuncts can be packed in the case, which when closed forms a compact and most portable little box with a handle on the side (12) only thirteen inches long, seven wide, and nine deep, which may be carried in any position without injurious results.

As before mentioned, this apparatus is only a rearrangement of familiar appliances adapted and combined for the greater convenience and control of the anæsthetist.

NEW RUBBER-DAM PUNCH.

AN exceedingly useful instrument has been introduced by the S. S. White Dental Manufacturing Company for punching holes of different sizes in the rubber dam. Somewhat like the plate punch for making holes for the metal backs of mineral teeth, this instrument claims the attention of the profession. Solid spring handles with box joint give origin to two arms; at the extreme end of the one at right angles is a conical steel die bevelled off to a point, and on the other is a circular plate the eighth of an inch thick, which is perforated with four holes of different sizes. This plate rotates and brings the holes one by one opposite to the die, and each one is retained by a catch governed by a spring, so that with a turn both plate and die are brought into direct apposition, the working part being under control of the handles. A very perfect hole is cut in every case, and should the instrument get blunt it may be sharpened by removing the circular plate and rubbing it on a flat hone.

Mr. Rutterford has favoured us with one of the above for inspection.

OSSILITE.

THIS white-paste filling, prepared by Mr. J. A. Robertson, and to be obtained from Messrs. W. & J. Jamieson's dépôt, has been highly recommended by several members of the profession, and our experience has rather added to than taken away from those expressions of approval. It belongs to that class of filling where phosphoric acid is employed as the liquid. We have not subjected it to analysis so cannot speak of its ingredients, but inasmuch as those cavities which have been filled with it are giving us satisfaction we can only reiterate our convictions as to its good qualities.

CAULK'S HYDRAULIC PEBBLES.

THIS cement, which has been in use in America some years, claims to withstand the acids of the mouth and possesses all the advantages of a white paste filling. We have had an opportunity of seeing some which have been in the mouth some time, and can speak satisfactorily of its results. It is specially urged not to mix with an excess of the liquid, which we have found to be correct by experiment, a sample being tried this way with only about a quarter more than recommended, taking twenty-two minutes to get thoroughly hard. The name "Pebbles" is derived from the granular state the powder is sent out. To obtain a good result it is recommended to take half a pennyweight of the pebbles to two drops of the liquid and mix with a stiff spatula. This must be done with a considerable firmness when a plastic mass will be formed which can be afterwards rolled into a pellet and put into the cavity, moulding it with an oiled burnisher.

We wish some of those gentlemen who have used, and thereby tested it, may favour us with the results of their experience, as it has all the appearance of a valuable improvement. But the test of time alone can be relied on.

APPOINTMENTS.

MR. WM. GEORGE DAISH, L.D.S. Eng., has been appointed Honorary Dental Surgeon to the Royal Isle of Wight Infirmary.

MR. JNO. O. BUTCHER has been appointed Assistant House Surgeon to the Dental Hospital of London.

MR. WILLIAM HERN, M.R.C.S., L.D.S. Eng., has been appointed Demonstrator of Cohesive and Contour Gold Fillings to the Dental Hospital of London.

MR. THOMAS HALL, L.D.S. Irel., has been appointed Honorary Dental Surgeon to the School Frigate H.M.S. "Conway."

IN our list of those gentlemen who obtained the L.D.S. degree at the recent examination, we stated that Mr. H. L. Albert was of the Middlesex Hospital, it should have been St. George's Hospital.

WE regret that want of space compels us to defer the reports of the meetings of the Odontological Society, the Odonto-Chirurgical Society, the Dental Hospital of London dinner, and other interesting communications till our next issue.

Correspondence.

[We do not hold ourselves responsible for the opinions expressed by our Correspondents.]

To the Editor of the 'British Journal of Dental Science.'

SIR,—In respect to the late fatal accident, caused by the explosion of a nitrous oxide gas bottle, I cannot see that the explosion was necessarily caused by the bottle containing gas. It reminds me of a circumstance that once occurred to me. Being in want of a copper pan to boil dilute sulphuric acid in to cleanse gold after soldering, I went to an ironmonger's and asked for a copper ball, belonging to what is called a ball tap, which was supplied to me. I then requested that it might be unsoldered, for which purpose we went to the workshop forge; the ball was placed in the fire, when a tremendous report and explosion occurred, which luckily did us no further injury more than covering us with coal and dirt; many of the large tools hanging on the walls

of the shop fell down, and the whole place was in a state of great confusion.

Yours, &c., F. H. JONES.

Bridge House, Stamford;
December 2nd, 1882.

THE DENTAL DIPLOMA; WHAT IT IS, AND WHAT IT IS NOT.

To the Editor of the 'British Journal of Dental Science.'

SIR,—Will you kindly publish a few remarks on the above subject in your next issue?

Mr. S. J. Hutchinson, in giving his opinions, which I believe we all agree with as far as they go, does not say whether he considers a M.R.C.S. a fit man to perform Dental operations unless he has the full license of a Dental Surgeon. But I think he will agree with me that a L.D.S. is better qualified to give constitutional relief until local can be performed, than a M.R.C.S. is to perform Dental operations. In support of that opinion I give below three cases which came under my notice in November alone.

1st. Young girl came to have a root removed. Had been to Dr. (Mr.?) —, who had broken the tooth three times, but faithfully assured her all was removed. This was in a town where there are forty Dentists.

2nd. Informed by the mother of a young patient that their doctor had offered to regulate her teeth by extracting an incisor and allowing the others to close up.

3rd. The patient, a little fellow of nine years, had had a severe fall and loosened his front teeth. Was taken to a medical practitioner, who put the child under chloroform and extracted the loose incisors, also saying that two other teeth had been driven up and must be extracted. So he grubbed out the canines, which had not even made their appearance or been injured by the fall, thinking they were deciduous teeth. But these, on being shown by the parents to their Dentist, a friend of mine, were found to be permanent teeth.

The medical profession might notice such cases as these in their papers with advantage to some of their members.

I enclose my card, but omit my name, having an objection to the system of advertising oneself by means of letter writing.

Yours, &c., D. S.

To the Editor of the 'British Journal of Dental Science.'

SIR,—Might not such a terrible accident as that of the bursting of the nitrous oxide bottle, described in your last issue, be avoided if the weight of bottle were *stamped in* the bottle instead of trusting to a paper label pasted on it. At all events there would be no excuse for not weighing.

Yours, &c., COMMON SENSE.

Obituary.

MR. ST. GEORGE FREEMAN, L.D.S. Eng., J.P., Waterford.

WE are indebted to Mr. O. A. Fox, of Brighton, for the following interesting biography. He says :

"Some are born to honour, others have it thrust upon them, and again there are the few who achieve it, and among the latter I do think my late friend St. George Freeman, J.P., of Waterford, should find a place. I also think a short history of his life may serve as an encouragement to the junior members just entering upon our profession. It was my pleasure to first make the acquaintance of my late friend some thirty-three years since, and not long after his commencement in a quite humble way in the city of his adoption, Waterford, as a Dentist, and by patient industry and right living he not only earned affluence from the duties of a large practice, but, what was better still, that of the approval of the citizens, who elected him more than once to fill the chair of their chief magistrate, and only a few years since he, at a banquet, was presented by them with a handsome silver service of plate, 'for the love and respect entertained for him.' He was also made a justice of the peace some years since. St. George Freeman was one of the earliest candidates for the English diploma of Licentiate of Dental Surgery, obtaining it in the year 1860. As St. George Freeman was some four or five years my senior his decease must have occurred before he had attained the age of sixty."

ANSWERS TO CORRESPONDENTS.

- J. E. H.—1. English gold coin is 22 carat. One ounce of coin gold would contain 18 dwt. 8 grains fine gold, and 1 dwt. 16 grs. refined copper.
2. The names are synonymous.
-

Communications have been received from Messrs. J. S. Amoores (Edinburgh), J. E. Hibbert, C. Vincent Cotterell (Rochester), Edward Cotterell (Bicester), Thos. Fletcher (Warrington), "An inquirer" (Manchester),—Hibbert (Pendleton), H. Wingrave (London), O. A. Fox (Brighton), William Hern (London), Alfred Coleman (London), Gilbert Walker (London), J. H. Parkinson (Manchester), Chas. B. Stonu (Brighton), Dr. Buttner (New York), C. Ash & Sons (London), Smale Brothers (London), W. and J. Jamieson (London), Dental Manufacturing Company (London), Thomas Hill (Birkenhead), Dr. Galezowski (Paris), Dr. Cacciaouerra (Catania), C. W. Dunn (Florence), W. Halsmann (Stockton-on-Tees), Fred. Bite (London), Felix Weiss (London), Willoughby Weiss (London), L. D. Caulk (Delaware, U.S.A.), G. O. Rutterford (London), Codman & Shurtleff (Boston), Dr. G. E. D'Arcy Adams (London), and Dr. Thomson (Brussels).

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